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EDITORIAL.

CONSOLIDATION OF THE ST. LOUIS COURIER OF MEDICINE WITH THE INTERSTATE MEDICAL JOURNAL.

Centralization of effort is the tendency of the times and in no field of journalism has this been more needed than in the publication of periodical medical literature. It is with much satisfaction, therefore, that the Publishers announce the purchase of the *St. Louis Courier of Medicine* and its consolidation with the INTERSTATE with the current number.

The *St. Louis Courier of Medicine* is one of the oldest Western medical journals, having been established in 1879. It was the leading medical journal of St. Louis and the West when many of the prominent physicians of to-day were young practitioners. Many notable advances in medicine and surgery were first recorded in its columns and the thirty-six volumes of the *Courier* give a very complete history of the development of modern medical science in St. Louis and the territory of which this city has been and is now the medical center.

Most of the subscribers to the *Courier* have already authorized the transfer of their subscriptions to the INTERSTATE MEDICAL JOURNAL, and the others are invited to do so at an early date.

GUI PATIN'S LETTERS.

The literary characteristic of the age is to publish the letters of distinguished individuals. The insatiable appetite of the public seems never to be appeased in this respect, despite the fact that hundreds of books containing reminiscences and letters have been printed in the last few years. And there is good reason for this. In the first place, letters when written in an unstilted, natural way give a rare insight into the workings of minds interesting to study, and, secondly, the true personality of the man is laid bare, not by a biased or a too lenient critic, but by the man himself—hence the portrait, with all its faults, is superior to any the most sympathetic friend could give. This is evident in Huxley's letters, the charm of which is still with us; in Carlyle's correspondence, with its appeal for a kinder judgment than his many books led us to

grant him, and in Darwin's letters, the human document that has done so much to crush the existing prejudices against the dry-as-dust scientists. For similar reasons the new definitive edition of Gui Patin's letters, which has been edited by Dr. Paul Triaire of Tours and was published at Paris by Honore Champion about June 10th, can be added to the above list of epistolary books. For Gui Patin, in his letters, not only gave a much better portrait of himself than did Antoine Masson in the painting executed in 1670 and presented to the Paris Faculty of Medicine by Patin's grandson, Guy Erasme Emmerez, but he pictured the times in which he lived with a fidelity, a truth, an aggressiveness highly interesting to read about to-day.

Those who have read the letters in older editions* will recall Patin's historic quarrel with Theophraste Renaudot, protege of Cardinal Richelieu, founder of the first newspaper ever published, originator of the State pawnshop in France, enemy of the Paris Medical Faculty, advocate of the modern spirit, mountebank, quack, and crime of all crimes, chemist and dealer in antimony! A rather ragged versatility, this, but here and there made bright by originality and daring. Gui Patin, on the other hand, was respectability itself, and anything that touched the honor of the Paris School of Medicine excited him into violence. He was Dean of the Faculty and friend of the people; he detested Richelieu's power and characterized all chemists as "arabic cooks;" he had horripilation when the "antimonial enthusiasts" were mentioned in his presence, and he did not hesitate to block Renaudot's way whenever he could, abetted and encouraged as he knew he would be by the loyal support of the whole Faculty. Moreover, he thought ill of all physicians who did not prefer the teachings of Galen, Hippocrates and Aristotle to those of Harvey and Pequet. All this was bad enough and invited criticism from opponents outside the School of Medicine, but what made him appear especially ridiculous in the eyes of Renaudot and his adherents, was his slavish love for bleeding, for senna and for bran-broth.

It can readily be imagined that not many days elapsed before the honored Dean and the hated mountebank locked horns. An epigram in the *Gazette,* in regard to his bleeding and senna weaknesses, and attributed to Renaudot, started a veritable war. Gui Patin's anger was aroused and ink-pots were exhausted. As a specimen of the controversy, the following gentle words of Patin should move us to an appreciation of his aggressiveness: "Renaudot is nothing but a flat-nosed newsmonger, a shameless trafficker, an infamous usurer, an odious charlatan." Could anger exceed these bounds? Could respectability be less mindful of its usual habiliments? Yet, Menage, in speaking of this prince of invective,

* Lettres de Gui Patin, précédées d'une Notice biographique par le docteur Réveillé-Parise, 3 Vol. 1846.

says: "Gui Patin was the merriest doctor of his time," but then Gilles Menage was the product of the seventeenth century when raillery, such as we understand it to-day, was an unknown quantity in ordinary conversation or in the writings of well-known authors, and was really first introduced into French literature by Moliere, the inimitable creator of "le Medecin malgre lui" and "le Malade imaginaire."

Even were we to overlook the vituperation of so high-tempered and honorable a member of the Faculty in his dealings with one whom he visited with contempt and scorn on account of unpardonable irregularities, the same benign spirit cannot be assumed toward his stubborness to admit the inestimable value of the brilliant beginnings of the age of Louis XIV., an age which he characterized by exclaiming: "At last we have reached the dregs of all the centuries."† This is another matter and passes human understanding. Surely a man who could indite letters of so rare a literary quality must have been aware of the scintillating currents around him. But, que voulez-vous, Gui Patin's mind was too thoroughly steeped in the lore of Grotius and Saumaise to apprehend the portents of any new movement. Nothing so well illustrates this attitude as his last letter (January, 1672), which runs as follows: "I have just learned from young Vanderlinden that Gronovius has died at Leyden. He was the last of the great savants of Holland. Alas! where are the successors of Joseph Scaliger, Baudius, Heinsius, Salmasius and Grotius. I also ascertain, from letters received from Brussels, that Plempius, the celebrated professor of medicine, is dead. Farewell to the sound teachings for which the Low Countries were famous. Descartes and the ignorant chemists ruin everything they touch, be it philosophy or chemistry."

Fortunately for modern readers, the notorious Patin-Renaudot controversy plays only a minor part in the letters, the bulk of the work being devoted to gossip, some of it spiteful, some of it innocent, but all of a flavor to enthrall the student of history. Gui Patin's erudition, his candor, his wit and even his coarseness lend themselves excellently to the sort of epistolary art of which he was the master, and not a tittle less would we have in his descriptions of the Court, of the Medical Faculty; in his anecdotes about celebrities, or his criticisms of books.

THE DEMENTIA PRAECOX QUESTION.

An interesting study might be made of the origin and development of ideas that have been wrongly understood or falsely interpreted. The curious tendency of the human mind to hold fast to error and to persist in misunderstanding probably lies at the bottom of any explanation that

† Causeries Du Lundi, C. A. Sainte-Beuve. Tome Huitième.

might be advanced. It will be readily admitted that an error in understanding is more deeply grounded than a truth and for the reason that a wrong interpretation is often the path of the least psychical resistance. It is always more difficult to remove a wrong impression than to create a new or correct one. For some reason not easily understood the average human intellect holds fast with a marvelous tenacity to wrong conceptions of the spoken or written word. There almost seems to be a kind of imitative instinct in the direction of what is not true. Consequently there is always taking place conflicts of opinion that do not concern themselves with facts as originally stated but solely with the prevalent interpretation of facts. Now the strange part of this is not that such disputes take place nor that they are continually arising but that the contestants do not follow the only reasonable method of arriving at the truth; that is to consult the original source of the occasion of their difference of opinion. This sort of thing may be admirably illustrated by a short account of a contention that has been agitating the neurological world for some years. Perhaps if the development of this episode be briefly followed some light may be thrown upon similar disputes of a relatively greater importance.

Some years ago Kraepelin, perhaps the most notable of the German psychiatrists, published, in his text books and elsewhere, a description of a mental disease that had previously included several different types. He gave a name to this new class of cases and added an admirable clinical description of the different varieties which this malady might take. The name he gave was dementia praecox. The prognosis and the development of the disease in each of its forms was described with great care and the limits of a rigid classification were clearly admitted. In a year or so dementia praecox invaded England and America, being conveyed by the usual channels, i. e., abstracts, original reading in the German and by word of mouth by some one who had heard Kraepelin lecture. If the early literature be followed it is easy to see that almost from the beginning a strange misunderstanding about this disease was very prevalent. This took place as a result of a careless abstract or two, or of a misunderstood phrase from the German. The phrase so wrongly put uttered by an authority soon became the accepted truth and what happened was that the discussions were not upon what Kraepelin said but what so and so said he said. Very soon teachers, talkers and writers began to refer in a somewhat frighted spirit to the radicalism of Kraepelin, saying that his ideas were too revolutionary and that psychiatry was not yet ripe for so sudden a departure from the classical way of clinical division. One of our most learned societies held a sort of a symposium on Kraepelin and his dementia praecox and among them they managed to spread broadcast a good deal of ignorance on the sub-

ject. It is to be noted that at this meeting the original paper of Kraepelin was not referred to and the original description, as put down in his text book, was never mentioned. A French society of neurology and psychiatry discussed the question for two whole days and the gist of all this work was that the disease in question was neither a dementia nor precocious. One of these savants, in a burst of enthusiasm, published a record of seventy-five per cent cures. The result of this agitation in France was the publication of a paper called "Dementia Praecox in France." An enterprising superintendent of a western state asylum published a statistical paper in which his admissions for the past year in the class of dementia praecox was put at eigthy per cent. Opposed to the sudden enthusiasm with which this disease was accepted in some quarters was a growing skepticism which denied absolutely that such a disease existed, and if it did, it was wrong anyway, because it made a confusion of the usual asylum statistics. On the whole the fashion seemed to be towards the point of view of mild skepticism, at the same time acknowledging in the main the services which were rendered by Kraepelin to psychiatry. It is now well on towards six years since the original excitement began in this country and now there is no corner of this land where a neurologist or psychiartrist is active that Kraepelin's dementia praecox is not a familiar subject, that is, from its controversial aspect. An Englishman, writing about it, brought out the fact if the original articles of Kraepelin's had been consulted a bit there would have been very little occasion for all the discussion that had taken place. The word dementia does not necessarily, in German, signify Blodsinn, which is the English equivalent of dementia in its incurable sense. In other words, Kraepelin did not mean and he never wrote that the disease was incurable. If we consult his original description we will find it as follows: "Dementia praecox is the name provisionally applied to a large group of cases which are characterized in common by a pronounced tendency to mental deterioration of varying grades. Dementia fortunately does not occur in all cases, but it is so prominent a feature that the name dementia praecox is best retained until the symptom group is better understood." If, during all these years, the men who wrote so voluminously had taken the pains to read in the original the exact words of Kraepelin the great dementia praecox question, in its present form at any rate, would not have existed. This is small comfort, however, for such is the tendency in medical thought that some other so-called question would have been given equal prominence. There is one obvious remedy always at hand,—read what an author has said, if possible in the original, and likewise attempt to obtain the spirit in which he wrote. The more important a new thought or discovery is, the more modest and the greater hesitancy is used in stating it. Kraepelin's serv-

ice is well put by Macpherson: "The truth is that Kraepelin himself would be the last man to assert that his conception was more than tentative, except of course, as regards diagnosis and prognosis. He has handed on the torch and even trimmed it."

MISAPPLIED CHARITY.

Charity, in the eyes of the masses, invariably carries a halo of goodness and self-abnegation. No matter how it is applied, the inherent magic of the term makes for much in their estimation and almost immediately, one might say, the donor of a tidy sum, or the originator of a scheme to alleviate distress among the people, is hurriedly placed upon a pedestal as an object lesson to those who are guilty of too much tugging at their purse-strings. This indiscriminate worship of an act which can be worthy and noble and beautiful, but unfortunately is just as often unworthy and ignoble in so far as the worthy poor are not its true beneficiaries, is a subject that should be properly judged from the vantage ground of truth.

We do not say that St. Louis is more guilty than other cities in the matter of misapplied charity, but we do affirm that there is enough of that sort here to engage the attention of critics for many a day. Take, for instance, the Saturday and Sunday Hospital Association. Yearly some $40,000 are collected and then distributed among various hospitals, the idea being that by this gratuitous act a grand lesson in charity will be inculcated. No doubt the promoters of this charity had the best intentions and thought that by appealing to the citizens at large, another want would be met fairly and squarely; but the fruits of the lesson are as yet so small and insignificant, though the distribution of the money has continued through a number of years, that if any one can make them out as prominent among the videnda at our hospitals, he ought at once to communicate his knowledge to the public. And, until this knowledge is made evident, we shall go on thinking that despite the assistance rendered by the Fund, our hospitals are not increasing the amount of their charity work to any alarming extent; that in reality they are doing less and less, and that the Saturday and Sunday Hospital Fund is nothing but a misapplied charity which has unwittingly been the means of annihilating even that slight vestige of charity so characteristic of the better grade of hospitals in former years. For truth to say when a hospital can "charge up" to a certain Fund the expense incurred by taking in the worthy poor, it is being unnecessarily coaxed and warmed and cuddled by a too credulous public.

It is not the purpose of this article to vilipend certain hospitals for benefiting by the Fund; the money is offered them unsolicited and why

shouldn't they accept it? But what we wish to convey is this, that the distribution of the money is a misapplied charity in so far as it destroys the finer sensibilities of institutions heretofore looked upon as peculiarly sentient to charitable demands. Granting this to be the case, why continue to destroy the uncommercial intent of hospitals, their unique and only lesson to the community, when other charities, on account of monetary reasons, are still in embryo: charities whose high appeal should be answered at once by a hearty support. What thought has been given to a Maternity Hospital, to our many clinics and to the care of the blind? A slight agitation in favor of a Maternity Hospital has been started, but what avails enthusiasm when the wherewithal is lacking. As to clinics, has not Dr. Richard C. Cabot quite recently ridiculed our advice to poor patients by quoting the very apposite conversation of Alice and the Hatter in "Alice in Wonderland?" Quite easy indeed, as Dr. Cabot remarks, to say to an out-door clinic patient, get medicine, get proper food, go to the country. But how can this be done without money? Really, when we recall the many inane remarks we make almost daily to the poor, we are tempted to supplicate the Recording Angel to drop a tear upon them and blot them out forever, as Lawrence Sterne did in a famous passage in his novel "Tristram Shandy." And finally, who as yet in this city, with its pest of unnecessary and multifarious charities, has bethought him to imitate the great and noble work instituted by the Queen of Roumania (Carmen Sylva) to add to the comfort, the happiness and welfare of the blind?

Truth to say, we have many charities that might be spared to make room for those above mentioned, and others that would follow in their wake. The good sense of the age ought to dictate in these matters; and state and individual ought to abide by its decision. If this were so, our charities would be fewer and would partake of greater dignity; they would be on a higher level and serve a better if not the best purpose, and finally, they would not be so closely allied with the British Washerwoman's Orphans' Home and Mrs. Jellyby's enterprises, felicitously described by Thackeray and Dickens.

NEBUCHADNEZZAR EXERCISES.

In an age that has time and patience to tolerate innumerable vapid theories on such profound subjects as the treatment of obesity, the proper exercise of the muscles and even the prolongation of life, it is meet that we should give some thought to each and every new vagary. Although the onslaught has often left us in a state bordering on mental collapse, the fear lest our enemies might suppose our little brains had been swamped, has goaded us on to fresh endeavor. Hence our in-

terest in the latest theory (we say this timorously because another may have sprung up, mushroom-like, whilst writing), one which strikes us as the quintessence of scientific thought as interpreted to-day, for it is natural, easy and appeals to both man and beast. Modern thought is urban-tired; it needs the fields and fresh air—and what more natural than in its evolution it should produce the Nebuchadnezzar Exercise.

Whether or no this theory sprang Minerva-like from Dr. Forrest's brain is unknown to us, but this much we can affirm that it is the pivot upon which the doctor's learned work, "The New Method," revolves. One quotation ought to suffice to place the book in its true light before the gentle reader's eyes: "This is the final exercise, and a most important one. It is our favorite. It might be called the 'Nebuchadnezzar Exercise,' for although, in this, one does not 'eat grass like an ox,' he takes the ox position. It is recorded that Nebuchadnezzar was a better man morally after he had been turned out to pasture for a time, and we are sure he was a better man physically, for there is no exercise that uses so many muscles and so stimulates the lungs, liver, and heart as does the 'all fours' exercise. It is not a dignified exercise, and yet it is simply coming back to first principles. Man crept before he walked. Going once around the room would be sufficient for a weakly person, and for quite a strong one ten circuits of the room would be sufficient. It is simply walking on hands and feet—nothing more." Can enthusiasts of former methods—such as walking through slushy grass, taking phytolacca and the "mixed treatment" of Kissengen and Vichy—ask for anything that is more in consonance with the spirit of the times, the Zeitgeist, which refuses to be weighted down by things heavier than breakfast foods and the juice of root-vegetables

Lest the fervor of the converts to this new method should partake of the St. Theresa exaltation, it would be well to dampen it by telling them exactly what happened to Nebuchadnezzar when he "exercised." "The same hour was the thing fulfilled upon Nebuchadnezzar: and he was driven from men, and did eat grass as oxen, and his body was wet with the dew of heaven, till his hairs were grown like eagles' feathers, and his nails like birds' claws."

The author solemnly says "though one does not eat grass like an ox, one takes the ox position," but even the most careful perusal of his book elicits no mention of the insignificant item of feathers and claws. Of course, we are not in a position to assert positively that these undesirable growths would occur to-day, not having studied the results in any given case. Nevertheless, even though the feathers and claws may have been part punishment for crimes committed by Nebuchadnezzar, especially the one involving the burning of Shadrach, Meshach and Abed-nego, the modern disciples of the Babylonian king should be careful lest some of their venial sins are not punished in a similar manner.

MODERN AIDS TO THE TORTURE OF THE SICK.

Under the above title, we have discovered in our local daily press a most interesting article, written by "the sick man." It contains enough of truth to warrant reprinting in our pages. We feel that the poor sick man who wrote this article was indeed unfortunate during his illness, but we cannot excuse him for reasoning from one experience, and judging a class by one of its representatives, a representative who seems to us a very poor sort. But let us quote the sick man:

"Some day when you have floated up to consciousness that is not too definitely defined, you become aware of the nurse's presence. She is a thing of cap and gown, featureless—or at least having no individuality of features. She lifts your head from the pillow, and saying: 'Swallow!' thrusts medicine into your mouth. 'Go to sleep!' she says in a tone of authority."

"You ask for a drink of water, to know who she is, and whence she came, and how long you have been sick, and what seems to be the matter, and for members of your family. You are told to be silent and to go to sleep. You remember neglected things, that pertain to your business, and want to get up to telephone the office, but nay, nay, little one; the nurse orders you to go to sleep, and refuses to answer questions. She devotes no time or art or skill or tact, to soothing you when feverishly exalted nerves keep you awake. She tells you to go to sleep, and saying 'bosh,' occasionally refuses to allow even the soothingest person to enter your room. She creaks in a rocker just out of your sight, embroidering fantastic roses."

"Sick as you are, the short-weight mentality of the nurse becomes apparent. She has no tact; no examinations in tact are required in the hospitals where trained nurses are graduated twice a year by hundreds. Later you become aware that psychology is not in the nurses' course. Your nurse keeps a record for the doctor, which is supposed to be a hard and fast, accurate history of your changing condition. Should accident aid you to possession of this record, you will find that you are credited with eight hours' sleep, when you know it was the nurse who slept, while you lay tossing. But only accident can aid you to perusal of this record, which she keeps jealously guarded afar from you. I have heard there are good nurses, tender, attentive, intelligent,—psychologically intelligent—but this is my impression of one."

To us it seems that though this article is somewhat whimsically written, and indeed shows a highly wrought temperament between its lines, it nevertheless assumes the character of a lay sermon. We somehow wish that the young lady who embroidered the fantastic roses might read it, and that its moral might strike home; for she would then see that in assuming certain airs, and neglecting to strive towards the

attainment of the relationship that should exist between patient and nurse, she not only harms herself, but she brings down much prejudice on the innocent heads of her deserving sisters.

The sick man is right, in that psychology should be taught in nurses' training schools. It should be taught, however, to the superintendents and principals of these institutions, in order that they may pick out such women to become nurses as will regard their work in the light of a mission to suffering humanity. Nurses should strive, not through definite knowledge attained, in the treatment of the sick man as a thing in bed, to compass their work; but rather should they rely upon their true women's hearts and natural feminine tact, to gain the status with their patients that our friend, the sick man, above quoted, so urgently and pleadingly calls for.

LITERARY NOTES.

At the Congress of Scientific Societies recently held at Montpellier, M. Calmette described the oldest professorial theses which are kept in the Archives of the Faculty of Medicine of Montpellier, and which were overlooked by Germain in his book, "Ancient Theses of the School of Medicine." (1886.)

These unearthed theses were written for a competition instituted in 1574, a fact which proves that competition in medicine is older than is generally believed. The competitors were: Francois Sanchez, later on the celebrated philosopher; Jean Saporta, Jean Blezin, called Schywn, and Pagesi. The theses give evidence of the principal medical questions with which the School of Medicine was occupied at that time. Moreover, there are annotations, and even the dialogue between the examiner and the candidates appears.

Some time ago, Dr. Jean Charcot offered his father's library to Salpetriere. These books, from a neurological standpoint, are probably the most valuable collection in the world. Recently, the furniture and wainscoting of the room in which Charcot worked, were added to the gift, and ere long, the original work-room of the famous neurologist, showing his books, documents and discoveries, will be reproduced in one of the halls of the hospital.

President Arthur T. Hadley, of Yale, is the author of "Standards of Public Morality," the second book in the American Social Progress Series, recently inaugurated by The Macmillan Company. At the outset of this work President Hadley notes the contrast in the life of the American people between its standards of private and of public morality, and then examines into the reason for this contrast with particular reference to the two chief forms of organized social activity—business and politics.

ORIGINAL ARTICLES.

THE SIGNIFICANCE OF VERTIGO OCCURRING IN CONNECTION WITH DISEASES OF THE EAR.*

By Walter A. Wells, M. D. Washington, D. C.

Vertigo is almost universally attributed by the layman to a disorder of the stomach, and this view, it must be added, outside of the aurists and neurologists, who are naturally inclined to look for a different causation, has quite a general hold even upon the medical profession.

In the course of a routine examination of my aural patients, I usually ask this question: "Do you suffer at all from vertigo?" The answer I obtain is generally something like this: "O yes, I have frequent spells of giddiness, but they come from my stomach;" or, "I am subject to biliousness, attended with vertigo;" or, "I am taking a course of treatment at present with the stomach specialist for this;" and they usually add, "but I cannot see that I am any better."

If we question these patients more closely, we will generally elicit the fact that the vertigo comes on quite independently of any errors of diet, and upon careful examination and application of the functional tests, we will discover in a surprisingly large proportion of such cases unmistakable characteristics of a vertigo of aural origin.

The idea of the gastric causation of vertigo owes its origin no doubt to the fact that in a certain class of cases, the vertigo is associated with nausea and vomiting—symptoms which very naturally suggest a diseased stomach. We shall speak later of the type of aural vertigo, commonly known as Meniere's disease, in which the patient is suddenly taken with vertigo, ringing in the ear, and vomiting and becomes almost completely deaf. An extreme pallor is generally present, a cold perspiration breaks out on the forehead and the patient, as a rule, falls as in syncope but without losing consciousness. The deafness, tinnitus and the vertigo are symptoms proper of labyrinthine lesion, but the nausea, vomiting and other associated symptoms are due to the fact that the apparent impulses which reach Deiter's nucleus through the vestibular nerve, overflow and set up irritation in the pneumogastric nucleus, and other medullary nuclei which are in the immediate vicinity.

In order to understand how vertigo is produced and what the organs are, lesions of which give rise to this phenomenon, we must consider, first of all, by what process we ordinarily acquire our sense of position and equilibrium.

* Read before the National Association of Pension Examiners, Washington, D. C., May 6, 1907.

Peripheral impulses which serve to inform the centres with regard to the movements of the body, are derived from the entire muscular system, and probably also in a very great measure, from the viscera. The sense of touch, and especially that in the plantar surface of the feet, plays an important role in maintaining equilibrium; of particular importance are the sensations derived from the eye-muscles whose varying movements inform us of our relation to surrounding objects.

But it is now universally conceded that the chief source of impulses, which serve the purpose of equilibration and orientation, are derived from the labyrinth.

In the vestibule and the semi-circular canal, we have the organ which has essentially to do with the sense of the position of the body in space.

The labyrinth, as we well know, is an organ having two parts with totally different functions, although anatomically connected in one continuous structure. Its anterior part, the cochlea, is concerned with hearing only, while the posterior part, the vestibule and semi-circular, as stated, subserve the function of equilibration.

Corresponding to this division of function, the eighth nerve becomes separated into two parts, the cochlear branch being distributed to the cochlea, and the vestibular, with its ampullar offshoots, going to the vestibule and semi-circular canals.

Within the bony labyrinth is contained a membraneous labyrinth, the membraneous semi-circular canals following the model of the bony structure, but being not more than one-third or one-fourth of its dimensions. The vestibule contains two membraneous sacs known as the saccule and the utricle. The membraneous labyrinth contains a fluid known as the endolymph, and between the walls of the membraneous and bony labyrinth there is a fluid known as the peri-lymph.

The nerve filaments of the vestibular nerve terminate in minute, delicate hair cells, which are very sensitive to the movements of the endolymph. Thus a change in the position of the head determining movements of this fluid in certain ways, disturbs these hairs and gives rise to sensations which, conveyed to the centres, enable us to judge at once the direction and the extent of the movements of the head. The semi-circular canals are so placed that each is at right angle to the other two and they correspond to three ideal positions of space.

We can readily understand how vertigo, due to erroneous impression of our position can arise, by any disturbance in this apparatus which will irritate hair-cells in a manner different from the way in which they are physiologically stimulated.

Continuous rapid rotation of the body causes the endolymph to travel along the walls of the canals and stimulate areas, which correspond normally to entirely different body positions, with the result of producing false sensations of position.

Like effects may be produced by lesions in any of the apparatus supplied by the vestibular nerve, or by disturbances in other parts of the auditory apparatus which lead to an undue increase of labyrinthine tension.

Ordinarily, increase in the tension of the labyrinthine fluid is provided against by the round and oval windows. These in the normal state are mobile structures, which readily yield to pressure of the fluid and so act as a sort of safety valve when the tension of the labyrinth is from any cause unduly augmented.

In many affections of the ear, it happens that this safety valve arrangement is seriously interfered with, and thus the individual becomes the prey of vertiginous sensation.

While the proximate cause of the vertigo is always a labyrinthine disturbance, we can readily understand that it is not necessary that there should be some serious lesion here, such as a caries, a labyrinthitis or a tumor, in order that the vertigo be present.

In many cases, the labyrinthine disturbance is but a slight secondary disturbance due to a middle ear process.

Ordinary catarrhal or suppurative otitis media, leading to cicatricial contraction of the tissue or immobility of the ossicles, may give rise to the symptom.

In the condition known as otosclerosis, fixation of the stapes is the almost invariable sequence and it is, therefore, in this disease that we more often have vertigo than in any other middle ear trouble.

Chronic suppurative processes, especially when cholesteatomatous masses develop, are likewise productive of vertigo and we can readily understand that when complicated with polyps or other tumors which obstruct drainage, there is even greater likelihood of the occurrence of this symptom.

Marked and persistent dizziness in this class of cases is significant as indicating that the suppuration process is advancing upon the internal ear. We should test, in various ways, the patient's capacity for equilibration, and orientation, and if found deficient, operative measures should be undertaken without delay.

The cause of the vertigo is sometimes located also in the external ear. A simple plug of wax may give rise to vertigo of a most serious type. Mycosis or a foreign body pressing on the drum membrane may have some effect.

The primary trouble is also located at times in the eustachian tube. The ill effects of deficient ventilation due to obstruction in this canal are too well known to need to be emphasized.

A French aurist, Royet of Lyons, recently insists that a large number of cases of vertigo and even some of a most severe type are due to ad-

hesions about the mouth of the eustachian tube in the naso-pharynx. Breaking down these synechiae, he claims, is very successful in curing the complaint.

In 1865, Meniere described a type of vertigo, which he believed to be due to an effusion of bloody lymph into the semi-circular canals, inasmuch as in one patient, examined by him, this condition was actually found. Since his day, the apoplectiform type of vertigo, marked by the occurrence of four cardinal symptoms, vertigo, deafness, tinnitus and vomiting, is usually spoken of as Meniere's disease, or syndrome. The latter is the better term, as it has been proved that this group of symptoms is by no means pathognomonic of the pathological state, described by Meniere, but occurs in a variety of aural diseases. Gelle, who had opportunity of examining several such cases P. M., more often found present a sclerotic process with fixation of the stapes than any other lesion.

A question of considerable interest is whether or not aural vertigo, other than the type we have just mentioned, has any peculiarities which enable us to distinguish it from vertigo due to other causes.

The presence of other ear symptoms, deafness and tinnitus, and the finding of actual disease in the ear is of course very strong presumptive evidence.

Corroborative evidence of a conclusive nature may usually be obtained by the tuning fork.

When the labyrinth is affected to any considerable degree, it will certainly be indicated by a loss in bone conduction. The tuning fork will be laterilized to the sound side and Rinne will probably be positive; at least Schwabach will be shortened.

When the tests indicate a lesion in the internal apparatus it is said that a loss of perception for the high notes is especially characteristic for labyrinthine disease. If these are not affected, in such a case there is reason to believe that the lesion is either central or located somewhere in the course of the nerve. In this connection, it may be mentioned that the certain identification of vertigo, as an aural symptom, may be of considerable value to experts required to examine pension claimants with regard to deafness. We have to deal so frequently with malingering in these cases that we ought always to take the vertigo into consideration, especially as the claimant does not as a rule recognize its significance; and when the functional tests accord, we have confirmatory evidence of an actual disease of the labyrinth that may assist materially in forming a judgment as to whether the deafness is real or feigned.

Besides the functional tests, we sometimes have in the vertigo itself, certain peculiarities that distinguish that of aural origin from other kinds of vertigo, viz.: In aural vertigo, either the patient himself or the objects about him, seem to move in a definite direction, as from right to left

or vice versa; second, the vertigo will not be better, but rather worse on closing the eyes; third, the equilibrium is the more disturbed on the side on which the ear is affected. For example, then, the patient stands on each leg separately, the disequilibration is more noticeable when standing alone on the leg corresponding with the affected ear. If the patient falls, it is usually towards the affected ear.

Von Steen, of Moscow, in order to accurately test the state of equilibrium in aural patients, has constructed an apparatus which he calls a goniometer. For practical purposes a satisfactory idea can be obtained by simply having the patient perform certain manoeuvres, such as hopping on one or both feet with eyes closed, and open, and noting the deviation from normal.

According to some authors lesion in the non-acoustic labyrinth is evidenced by a disturbance of the dynamic as well as static function of the muscles. Information on this point can be gained only by the use of such apparatus as the ergograph or dynamometer.

In locomotor ataxia, there is present a disequilibration, due to incoordinatation, that we ought to have no trouble in distinguishing from aural vertigo. The absence of the knee-jerk, the Argyl-Robertson pupil and the characteristic gait are as a rule sufficient for a diagnosis. Cerebellar lesions are likewise accompanied with an ataxia, which ordinarily is so characteristic, that confusion ought not to arise. In case of doubt, the occurrence of atrophy and other cerebellar symptoms would be conclusive.

A vertiginous sensation in some cases represents the aura of an attack of epilepsy, and in some cases of petit mal, it may represent the whole attack. The neurotic element in these cases, and the history of the occurrence at any time of biting the tongue, foaming at the mouth or loss of consciousness, would prevent an error of diagnosis.

Aural vertigo is not accompanied with loss of consciousness; although in the apoplectiform type of Meniere a syncope sometimes occurs due to extension of the irritation to the bulbar centers.

Vertigo is sometimes a sympton of arterio-sclerosis. The age of the patient, the atheromatous state of the arteries, and the absence of any other cause of the vertigo will enable us to diagnose this form without much difficulty. Finally we may mention a rare form of vertigo which has been described under the name of *ictus laryngе* or laryngeal vertigo.

The patient, who is usually adipose or gouty, has first a tickling sensation in the larynx which brings on an attack of coughing. Suddenly he loses consciousness, and the head drops if the patient is in sitting position, or he falls if the attack overtakes him while on his feet.

The peculiarities of this affection, which, strictly speaking, is not a vertigo at all, are such that there ought to be no question of a confusion with the kind of vertigo we have been discussing.

Aural vertigo is an affection which in the opinion of the author ought to receive some recognition in the examination of claimants for pensions. It is true that a subjective symptom (except when accompanied by such a state of desequilibration, that the patient cannot maintain an upright condition), and subjective symptoms are given very little weight in our instructions for examinations. But, for that matter, deafness and blindness are also subjective symptoms, and these are both recognized as disabilities entitling the claimant to liberal ratings.

Vertigo arises from disease of the same organ as does deafness, and objective conditions causing it can just as well be made out.

When assuming the severer types, it is often a most distressing malady. All exertions such as lifting, precipitate the attacks, so that many kinds of manual labor are closed to this class. Indeed, certain employments such as require one for example, to go on top of a building, or other elevated places, or to drive, or to ride a bicycle, must be regarded as not entirely free from danger.

The object of this paper has been accomplished if it has succeeded in bringing forcibly to your attention the following points in regard to the malady which we have chosen as our subject.

1. Vertigo is very seldom of gastric origin, the majority of cases supposed to have this origin being in reality dependent upon some disease in the auditory apparatus.

2. The proximate cause in all cases of aural vertigo is in the semicircular canals and vestibule of the labyrinth, as it is here is located the peripheral apparatus concerned with the spatial sense.

3. The labyrinth, however, is not necessarily diseased in aural vertigo, as a great variety of conditions of the middle ear and even the external ear, which react upon labyrinthine tension, may constitute the primary lesion at fault.

4. Aural vertigo has peculiarities of its own, which taken in connection with the associated symptoms, the objective signs, disease in the auditory apparatus and the tuning fork tests enable us to diagnose it with reasonable certainty.

5. In many instances the vertigo is of such a serious nature as to interfere materially with performance of manual labor. We therefore deem it worthy of consideration in estimating the disability of a claimant for pension.

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COMBATING PLAGUE IN JAPAN.

By Shibasaburo Kitasato.
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Plague Epidemics and Their Detrimental Effects.—In 1896 the epidemic of plague which had previously raged in India and Hongkong invaded Formosa, which from that time became a source of the dangerous pestilence. In this insular possession of Japan, a condition was produced in which the eradication of the etiological factor became almost impossible, and the situation began to menace the mother country. However, strict enforcement of preventive measures and quarantine precluded the entrance of plague from this into the main islands of Japan, but danger to our country was present from other sources, for the first case of plague encountered during this epidemic was found aboard a vessel which entered the port of Yokohama in 1896. The ship brought the dangerous germ from India and from southern China, with which regions Japan has frequent commercial intercourse. Since this event, steamers arriving at the same port and at Nagasaki and Kobe have brought in several cases of bubonic plague, but, as the discovery has always been made in time and preventive measures and quarantine have been promptly applied, infection has been avoided for the time being.

However, the origin of the epidemics in Japan has been located not in the patient but in inanimate objects. Incoming vessels from the infected regions—that is, from Bombay and Hongkong—began to introduce into the country the plague germ mingled with their freight, which principally consisted of cotton. The Government being unaware of this dangerous importation, the freight was allowed to land and as a consequence the infection rapidly spread in the principal trading ports. At first the epidemic prevailed among rats; afterwards it attacked human beings, with the result that many human lives were sacrificed, tens of thousands of yen of State money were expended, and the foreign trade of the country also suffered considerably.

The principal epidemics in Japan have been as follows: The first outbreak was that during the years 1899 and 1900. It began in Kobe; spread to Osaka, where its ravages reached a high mark, and then invaded Hamamatsu and Wakayama. The total cases in this epidemic numbered 230.

The second invasion was in 1902 and 1903, the source of this epidemic probably being in cotton which was imported from Hongkong. The initial cases occurred in Yokohama and it then spread to a district in

Tokyo. The epidemic was stopped by the combined efforts of the two cities after it had claimed 71 victims.

The third outbreak occurred in 1905 and is still prevailing. Throughout different localities—namely, in Tokyo, Chiba, Kobe, Osaka, Kagawa, and Moji—a number of victims have succumbed to it. The disease appeared in Tokyo in the early spring, chiefly in the Fukagawa district, and it then spread to the Chiba prefecture, where a summer epidemic prevailed to a slight degree. The origin of the outbreak in Kagawa, lasting from May to the middle of June, appears to have been similar to that of the Osaka and Kobe epidemic and it was evidently due to direct contagion; its severity has been unparalleled in recent years. Two plague patients were found in the city of Kobe in August and the number of cases increased rapidly within the next few months, so that during the year the total number of victims amounted to 90. Next to Kobe, Osaka suffered most severely, there having been many cases since October of the past year, the number reaching 134 in three months. In both cities the outbreak spread throughout all the districts and it is still raging. Plague has also appeared in Shimonoseki and has claimed nine victims in that city. This epidemic has had no precedent both in its severity and in the number of its victims, the total of the cases during the year having reached 297.

The following table shows the regions of Japan in which the series of outbreaks occurred and the number of patients in each:

	Year.	Patients.	Deaths.	Principal regions of the epidemic.
First outbreak	1899	62	45	Kobe and Osaka.
	1900	168	153	Kobe, Osaka, Hamamatsu, Wakayama, and Nagasaki.
	1901	2	2	Wakayama.
Second outbreak	1902	14	9	Yokohama and Tokyo.
	1903	57	49	Do.
Third outbreak	1904	1	1	Kobe.
	1905	297	257	Tokyo, Kobe, Osaka, Chiba, Kagawa, Moji, and Nara.
Total	.....	601	513	

The number of patients during the past year, distributed in different localities, is as follows:

Tokyo, 15; Chiba, 11; Osaka, 134; Nara, 2; Kagawa, 36; Kobe, 90; Moji, 9; total, 297.

In Japan the cost of preventive measures and quarantine has reached an enormous figure. During the first outbreak the city of Osaka expended more than 352,500 yen; during the second, Tokyo city spent

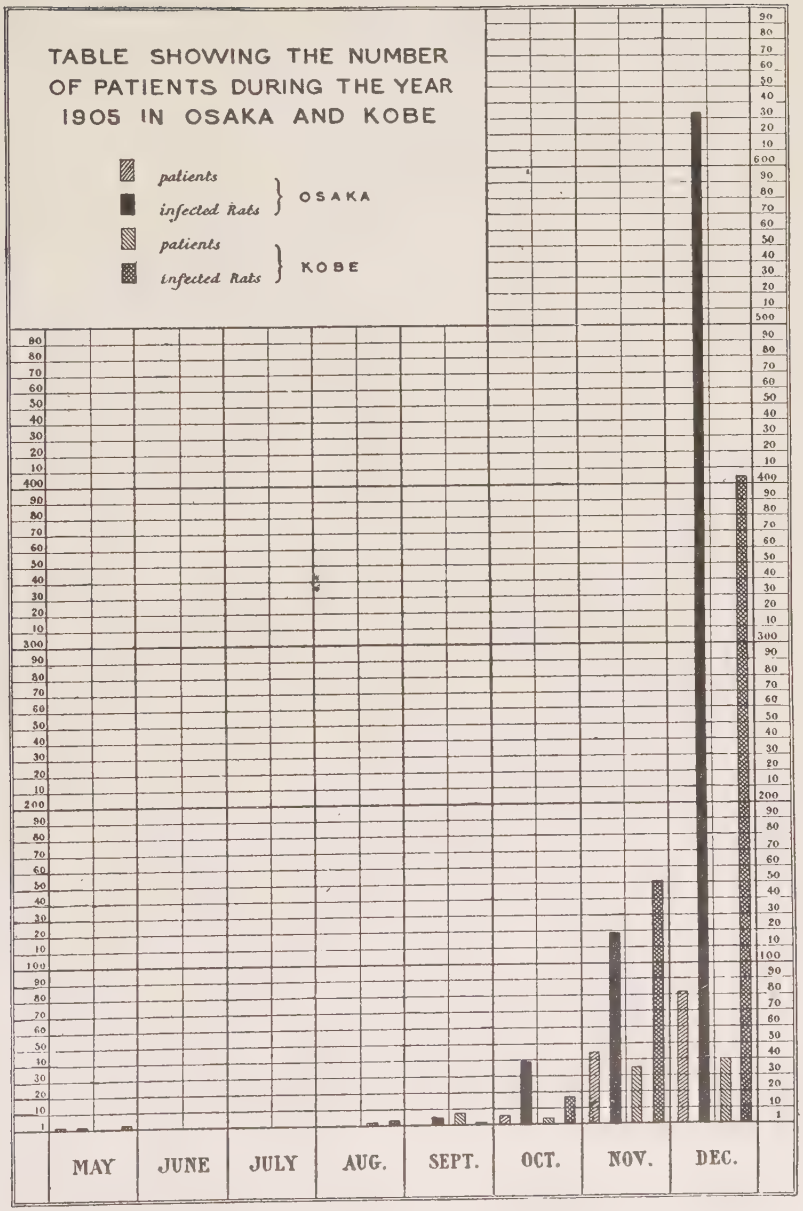

FIG. 1.—Table showing the number of plague patients and infected rats during the year 1905 in Osaka and Kobe.

320,000 yen, although the number of patients there only numbered 15—i. e., 21,333 yen for every victim. These figures show the expense of plague outbreaks even when they are considered apart from their dread-

ful effect upon human lives. From the facts already given it will not be difficult to infer how much the present epidemic, which is raging in Kobe and Osaka with unparalleled vigor, will burden the financial resources of the country. Already the city of Kobe has given out 310,000 yen and Osaka city 470,000 yen for its prevention; and it is apparent from the present conditions that we will have to spend considerably more money to keep the plague at bay.

Such is the direct burden of plague upon the finances of a country, but this is not all; for the indirect detrimental effects must also be considered. This loss, indeed, can not be estimated, because it is a wide

FIG. 2.—Showing area in which disinfection of houses and the destruction of rats is being carried on. The infected area may be seen inclosed within a zinc wall.

and far-reaching one, affecting both domestic and foreign affairs and one which can not be compared with that of an epidemic of any other kind which involves only its direct damage upon a limited community. Plague, indeed, is a fearful enemy to mankind.

Two methods of invasion are apparent from the studies of the epidemics in Japan: One is contagion from imported plague patients and the other by contact with the disease germ mingled with the freight brought in from some infected region. The nature of the preventive measures to be employed depends upon the source of the epidemic. If the invasion be by means of a plague patient, discovery is made easier and prevention or quarantine, as the case may be, can promptly be applied, so that the

depredations of the disease may be confined within a small radius. On the other hand, if the organism is being propagated through the medium of rats, preventive measures are difficult; for, by the time infected rats are discovered, human beings have already become victims. Moreover, as a rule, by the time man receives the contagion from rats, the ravages of an epidemic have already reached serious proportions among these animals, so that the outbreak soon assumes a character which renders control difficult; the infection therefore spreads far and wide, affecting both men and animals. Such a result is illustrated by the first outbreak and by the present one in which Nagasaki and Kobe are the chief sufferers. The results at Chiba and Kagawa can be taken as an example of a

FIG. 3.—Rat-proof zinc wall inclosing the buildings of a cotton firm, Fukagawa, Tokyo.

case where the source of the epidemic was in human patients. In this outbreak we were able to keep the epidemic confined within a small locality by promptly applying the usual preventive measures—that is to say, before the rat was attacked by the germ. We can thus see that the same preventive measure may give different results in different cases.

In every epidemic it is difficult to ascertain the exact circumstances under which the plague invasion occurs. This is especially true when the medium of propagation is outside the human patient, and it is notably the case where rats are the agents. So far, in every case, the plague outbreaks in Japan were first evidenced in localities which have direct communication with foreign countries and from these points the spread

to the regions of the interior occurred. Moreover, the first case in any place which subsequently became a source of plague was invariably associated with freight imported from India or from Hongkong. The first epidemic owes its origin to a steamer which entered the port of Kobe with a cargo of raw cotton and Chinese rice from Bombay and Hongkong. The second one may be traced to a vessel which came to the port of Yokohama with freight consisting of raw cotton. The present great epidemic which prevails in Osaka and Kobe is due to a steamer which anchored in Kobe harbor laden with a consignment of raw cotton from Bombay. These statements demonstrate the almost identical origin of the fatal pestilence in each instance.

As a rule, the plague germ on entering these trading ports does not immediately attack man; it first infects rats and by the time the first human victims are discovered, the epidemic has assumed a well-advanced form; this fact has been demonstrated on several occasions. The present epidemic in Osaka may be considered as an example. In February it was preceded by the discovery of infected rats, but only during May of the same year did human victims begin to appear, thus showing how deep rooted was the source of the infection.

The season during which an epidemic occurs has a marked influence. Thus it is apparent that a winter outbreak is generally of a most chronic character; it rages for a long period with great severity, spreading over a large extent of territory. The first invasion, the present epidemic in Osaka and Kobe, and the second one in Tokyo and Yokohama, belong to this class. A summer epidemic is usually acute in character and as a rule is spread by contagion. It may be severe though of short duration, and it is limited to a small area. The epidemics in Chiba and Kagawa during the past year and that of Hamamatsu in 1900 were of this nature. It should be noticed that during a winter epidemic a large number of infected rats are met with, while in a summer one but a small number or even no infected rodents are encountered.

Preventive Measures.—As the plague epidemics in Japan, according to observation, originated in the Indian Peninsula, in Southern China, and in Formosa, the first and most urgent step to prevent the introduction of the disease was to establish quarantine against vessels coming from these regions. With this end in view, quarantine stations were erected at Yokohama, Kobe, Nagasaki, Moji and other principal trading ports and the necessary measures enforced as strictly as possible. So far, several cases of plague have been discovered on board vessels coming from the infected regions; but as a result of the strict quarantine, the danger of contagion has been prevented. When a ship is found to have plague infection on board, all communication with the land is stopped, measures are taken to destroy the rats, and other sanitary precautions are employed. In order

to provide the means for killing rats on board ship, auxiliary vessels especially fitted for that purpose and similar to those used in Hamburg, Germany, are recommended. We now have several of these at Yokohama, Kobe, and Moji, and they will be employed during the present year.

The Department of the Interior of the Japanese Government, through the Bureau of Public Health, which belongs to that Department, names officials who are to meet to discuss and execute measures for the prevention of infectious diseases. These committees consist of physicians and surgeons with assistants and quarantine commissioners. Each municipality or prefecture has also its established board of health, which consists of one physician, several assistants, and a number of inspectors. This organization is placed directly under the control of the police department, and it takes charge of all matters relating to infectious diseases. The principal prefectures and districts are provided with isolating hospitals to receive patients and with laboratories for investigation and these boards of health carry out the necessary preventive measures. In case of a plague outbreak, the prefectural government increases the number of health officials so as to meet the emergency. When an epidemic of an unusual nature takes place, an imperial rescript is issued by means of which the organization of a special board consisting of commissioners, inspectors, clerks, and watchmen is ordered for fighting plague. In addition, several councilors are appointed to submit advice relating to the matter. The municipal government of Osaka has increased its staff by 311 officials and a number of councilors because of the present outbreak.

In Japan all affairs relating to health and sanitation, particularly to the prevention of infectious diseases, are referred to local administration the execution of the necessary measures being carried out by the aid of the police. The expenses required for the purpose are shared by the people of the locality in which the disease occurs, aid also being given from the financial resources of the prefectural or municipal government. In case of an outbreak of contagious disease, the Central Government will give assistance to the local ones to an amount not exceeding one-sixth of the total outlay. However, in the case of plague, the Central Government has spent and is spending an amount enormously in excess of that fixed by regulation.

The Institute for Infectious Diseases acts as councilor to the Government in matters relating to health, and it especially advises in regard to the preventive and sanitary measures which are to be taken against infectious diseases. When a plague epidemic exists, our Institute, through governmental appointment, furnishes those commissioners and officials who are to take charge of the preventive and sanitary measures. It has a plague laboratory constructed in conformity with the most advanced methods and in this place pest serum and vaccine are prepared for the

use of the entire country. As a part of its work the institute gathers a number of physicians and surgeons throughout Japan in order to give them instruction in bacteriology and epidemiology. The number who have finished this course at present amounts to 1,293, and these physicians are scattered throughout the country. At least a portion of them are now actually engaged in important work in hygiene and preventive medicine. As these specially educated physicians and surgeons are distributed throughout Japan, it is a matter of ease in an emergency at once to gather several hundreds of commissioners. To fight plague successfully requires

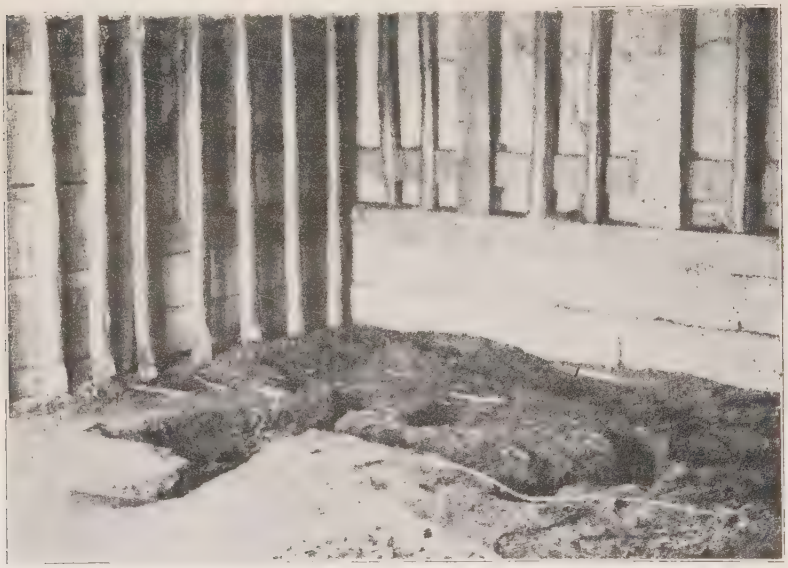

FIG. 4.—Excavations made in searching for rats in the ground, under the first floor of the warehouse of a cotton firm, Tokyo.

a large number of trained men, and the country owes its thanks to the Institute for rendering so many available.

Such, in brief, is the account of the organization of the preventive work which so far has been instituted in Japan. However, I must here express my sincere admiration and surprise at the manner in which your country is protected from pestilence. You have medical officials stationed at the principal ports of the world which plague frequently haunts, so that inspections are made at the places from which vessels clear. I believe preventive measures against plague to be the most urgent need of the age, but in order to be of permanent good they must include, as is the case with the United States, not only temporary means for preventing the intrusion of the disease to be enforced at the ports of entry, but also

medical officials to be stationed in infected regions, at which points any vessels starting for the country in question can be strictly examined. I am of the opinion that it would be advisable to place such officials at Indian and South China ports to which the plague outbreaks in Japan have been traced.

In combating plague, the quarantine of ports, however strict and complete it may be, can not safely be relied upon and for this reason general provision throughout the country must be perfected against infectious diseases. As plague can not be classified with the ordinary ones

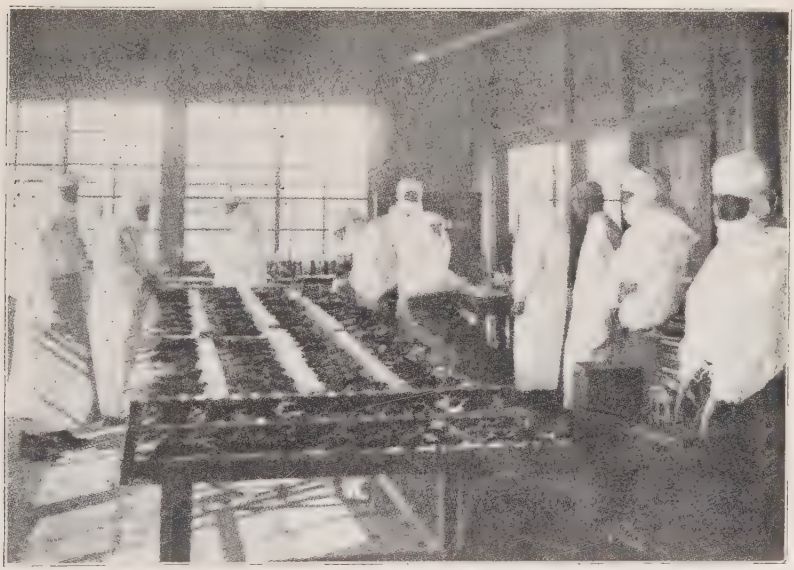

FIG. 5.—Bacteriological laboratory of the Tokyo Metropolitan Police Board. Examination of rats for pest infection.

of this class, the regulations to meet such emergencies in Japan were found in general to be unsuitable, so that the Government was compelled to remodel them in order to meet the condition. The principal features of the new regulations are as follows:

1. Authority for disinfection, isolation, and quarantine is given. Measures looking to the prevention of the disease are to be enforced not only against the living patients and in respect to the houses and furniture occupied and used by those actually stricken with plague, as well as of those who are only suspected of having the infection, but also in regard to the bodies of those dead with plague.

2. To prevent the spread of the infection, as many rats as possible are to be killed.

3. The period of isolation of suspected patients is not to be less than ten days.

These modified regulations were based upon the experience of several years. In carrying out measures of disinfection it is necessary to extend the area to be covered as far as possible, as the plague germ is very easily propagated. It is also true that bubonic plague often develops into that of the pulmonary or pneumonic type and in that event the disease not infrequently infects by direct contagion theerfore, especially in times of epidemic, quarantine and isolation must be strictly enforced. It was thought necessary to fix the time of isolation at ten days because of the fact that the incubation period of the disease lasts from six to seven days. The killing of all rats which it is possible to secure was deemed a necessity, as these animals have the closest connection with plague. The above principles were applied where the intrusion of the pestilence was suspected even before the formulation of the new regulations.

In attempting to catch rats it is important to remember that traps and appliances should be set in all buildings, and it is imperative in those which contain cotton and grain, in which the plague germ is most liable to be retained. I gave warning in this respect a few years ago and as a result the municipal government of Tokyo has passed an ordinance respecting buildings and warehouses which provides that all buildings must be constructed in a manner to prevent their becoming an abiding place for rats. A similar regulation has been adopted in other cities and prefectures, especially in those having direct connection with foreign countries. These legal acts appear to be rather despotic, but nevertheless they must be deemed necessary in view of the dreadful character of the disease which is propagated by these rodents. I believe that the extension of similar regulations to dwellings so as to render all of them rat proof would in the future generally lessen the danger from the infection. Such a step has yet to be taken.

Sanitary Work.—The principal undertakings established for the enforcement of preventive measures are (1) bacteriological examinations; (2) search for patients; (3) killing of rats, disinfection, and the application of sanitary methods; and (4) disposal of patients and of infected articles. The work may briefly be described as follows:

The bacteriological laboratories in the different districts and prefectures are for the study and diagnosis of plague, and in times of epidemic they are used solely for this especial purpose. In such cities as Kobe, Osaka, Yokohama, and Tokyo, which are most frequently threatened by pest, the Government for several years past has been encouraging the destruction of rats by buying all which are killed or captured by the people. This practice has a twofold purpose—one the prevention of an epidemic, and the other the ascertaining whether any infected animals, the

presence of which usually precedes an epidemic among men, are existent. An immense number of rats is bought by the Government and each one of them is examined bacteriologically. From 3,000 to 4,000 rodents are examined daily even in ordinary times, but when an epidemic occurs the number is increased to an enormous figure. As plague outbreaks in Japan are usually preceded by rat infection, these examinations are to be regarded somewhat in the light of a reconnoissance. The utility of this precaution is illustrated by the fact that in 1904 an infected rat was discovered in Yokohama before any human victim had been found and as a result the source of the infection was sought and

FIG. 6.—Bacteriological laboratory of the Tokyo Metropolitan Police Board. Examination of rats for pest infection.

finally traced to a British steamer, the warning being given in time. During epidemics the examination of rats is even more necessary, for it is only by such a process that the condition and the manner of propagation of the pestidence are actually known.

To judge from the experience of the past, it can be suggested that in examining rats particular attention should be paid to their submaxillary and cervical glands and to the spleen. These organs in most cases show the evidence of infection, if there be any. The inference to be drawn is that the rat receives the plague germ through the mucous membrane of the mouth and throat.

An important work during an epidemic is the bacteriological exami-

nation of specimens obtained from the patients and the dead, for the diagnosis must depend upon both clinical and bacteriological observation. In suspicious cases, material for investigation is taken from the affected parts, such as the glands or skin. The sputum of the patient is also frequently subjected to examination. In the dead, the heart's blood and spleen and the contents of the glands or lungs are scrutinized. Microscopical examinations are undertaken, cultures are made and animal experiments are performed with the specimens which are gathered. Agglutination by a pest serum of the bacteria obtained is also studied. Obviously it is often difficult to assure one's self of the discovery of an infection by any of these means, but there are many cases on record where suspicious substances, such as cotton, filth, and rotting grain harbored the *Bacillus pestis*; as an illustration I will cite the fact that in 1899, in Osaka, cotton waste was found to contain the plague organism.

The searching for patients, especially when the first invasion of plague is suspected, is also an important portion of the preventive work. Physicians are expected by law to report any infectious disease which they discover, but such reports are in most cases not reliable; indeed, during an epidemic period this source of information reveals only about one-tenth of the whole number of cases actually existing. In the localities which have never before been visited by the plague, the physicians themselves are ignorant of the nature of the disease and they may thus permit an outbreak to spread rapidly. This unfortunate condition was illustrated in Kagawa during the past year.

As a means of promptly seeking out patients in places which are frequently in danger of an outbreak of pest, the physicians attached to the police are given authority to examine the bodies of all persons dead from acute febrile diseases. During epidemic periods such examinations give results parallel to those obtained by the investigation of the rats which are caught, and that such precautions can not be neglected is shown by the experience obtained in the past. The following table gives the number of plague patients discovered during the outbreak in Osaka and Kobe during the past year:

	Osaka.	Kobe.
Physician's reports	49	30
Inspection of dead	27	26
Inspection of houses	34	33
Among the isolated suspects	20	0
Miscellaneous	4	1
	134	90

The value of the inspection of the dead is apparent, for the foregoing table renders it evident that in Osaka 27 and in Kobe 26 instances would have occurred in which bodies which really were infected with plague

would have been regarded as being dead of other diseases and thus the number of foci of the epidemic would have been increased.

The inspection of apparently healthy persons living in an infected locality or its vicinity is not an easy task, though a very necessary one. Epidemics are most liable to prevail in places where ignorant people reside and this fact alone greatly hinders the work of the health inspectors. Only by reason of their devotion to duty and work can their efforts be successful. The value of their work was illustrated during the outbreak of the second epidemic in Tokyo. In the latter city, with the exception of three early cases out of a total of 13, a suggestion and warning was given by the diagnosis of plague in persons apparently

FIG. 7.—Male patient. Inguinal and femoral bubos (cured).

healthy and these persons were removed and isolated. During the present epidemic in Osaka not a few of the dangerous patients were discovered by the general inspection of healthy persons. However, the task of finding plague cases by such a method becomes more difficult in proportion as the epidemic spreads and the patients are found scattered over a wider area. As aforesaid, plague in a patient must frequently be diagnosed by both a clinical and a bacteriological examination and the application of such tests must be undertaken as speedily as circumstances will permit. The absolute diagnosis is usually effected within forty-eight hours after the finding of the suspicious patient or of the dead body and during the examination the patient or the dead body is to be regarded as if it were a genuine instance of plague infection.

Even during ordinary times, the killing of rats is enforced in localities where imported freight is stored or where laborers live, and this enforcement is made general when there is danger of an outbreak of plague. At least two days before the general sanitary precautions outlined above are applied rat catching and killing devices, such as traps and poisons, are distributed to every dwelling and warehouse. Formalin vapor or sulphur dioxide is used in buildings which can be tightly closed. All localities which are constructed so as to permit of the abode of rats are rebuilt, the sewage is improved, and all filth is burned. The above constitute the measures employed for removing and killing rats. The occupants of the dwellings in which infected rats are frequently found, or in which plague patients are discovered, are removed and the whole house disinfected and rendered unfit for rodents by the sanitary measures adopted in the killing of rats; in order more effectually to destroy the latter, galvanized iron walls are erected around such houses and all exits of the sewers are closed by means of metal nets. If the infected area is extensive it is divided into small sections, and the same method is applied to each one of these. The first steps in sanitation after these precautions have been taken are to search for and destroy the rats, to disinfect the furniture and finally the entire building. For the latter purpose carbolic acid, corrosive sublimate and lime are used, articles of an especially suspicious nature being at times steamed, boiled, or burned; all of the disinfected objects are ultimately exposed to the sunlight. In case the building is situated in such a manner as to render the application of sanitary measures difficult, it is sometimes desirable to disinfect by burning the entire edifice. Such extreme measures I believe to be especially justifiable where the infection has not as yet spread to a large area, and they are not infrequently made use of in Japan. The galvanized-iron fence or wall which is erected before fire is set to the premises prevents the rats from finding their way to the neighboring houses, and thus possibly spreading the disease.

However, the difficulties attendant upon the entire destruction of houses for purposes of disinfection are in some instances insurmountable, and this is particularly the case when plague patients and infected rats are scattered over a large area. The present epidemic in Osaka and Kobe illustrates such a situation. If extreme measures were to be applied to these cities practically whole districts would have to be burned.

As has been remarked above, the zinc fences prevent the escape of rats during the work of disinfection and their effectiveness in segregating an entire area before an epidemic becomes general has been abundantly illustrated during the outbreaks in Yokohama, Kobe, and Tokyo. These walls present a most peculiar appearance. Their height varies according to the circumstances, but usually it is about three feet, with a foot or two

buried in the ground. Rats can neither climb such a wall nor burrow under it. The use of zinc for such a purpose is apparent, for it is not liable to rust as are other metals, and it may be used repeatedly. These walls have been utilized during every epidemic, the largest one being constructed in Tokyo in 1903. In this instance the area inclosed was three-fourths of a mile square, with partitions dividing it into several sections. In addition, every other place where infected rats were found was inclosed

FIG. 8.—Female patient. Infection of the eyes with pest bacillus (fatal case). Primary lesion, right eye; secondary lesion, left eye.

within other fences and the total length of the walls so used measured 29,148 feet, or about four miles.

The discovery of a case suspected of having plague is promptly followed by the proper measures to prevent further spreading of the disease. Inspecting physicians hurry to the patient's residence and, if he really proves to be attacked by the pest, the victim is at once conveyed either to a hospital for infectious diseases or to one of isolation where proper

treatment can be given. Should a dead body be discovered infected with the plague bacillus, the cadaver is first disinfected externally and then cremated. Each member of the family and the contacts in the neighborhood are then sent to an isolated detention dormitory, where they are given a daily examination during their term of quarantine. They are subjected to all possible means of disinfection and prophylaxis, including the conferring upon them of passive immunity by inoculation with pest serum, whereas those from the neighborhood who are in less danger of having contracted the disease are given pest vaccine. In every epidemic this serum and vaccine have been generally used, over 10,000 individuals having been inoculated, but we have been unable to obtain exact statistics as to the value of these remedies during the epidemics on the main Japanese islands.

However, during the outbreak in Tainan, Formosa, occurring in 1901, the conditions were such that we were able to obtain valuable statistics and the large number of persons which were inoculated with pest vaccine gave suggestions as to the value of vaccination. Of 10,876 persons inoculated in Tainan only seven were attacked by plague; while out of about 40,000 persons who failed to receive this treatment, more than 500 were infected. From such statistics it is not difficult to believe in the favorable results of vaccination, although we are not yet in a position definitely to determine its value.

Those plague commissioners and officials who from the nature of their duty frequently came in contact with the patients have received prophylactic inoculations of the serum (16-20 cubic centimeters). Not one of these individuals has as yet been infected. Instances are many in which the value of the serum as a preventive has apparently been demonstrated.

For the treatment of plague patients two methods may be recommended—one the extirpation of the buboes and the other the inoculation with serum. The efficiency of the extirpation and of the serum treatment depend on the stage of plague development which exists at the time they are instituted; when performed in an early stage, a favorable result may be expected, but in a later one these measures become futile. As a consequence, it is important to obtain a positive diagnosis as early as possible.

That good results may be obtained from serum treatment in such cases admits of no dispute. During the first outbreak in Osaka, Yersin's serum was used, but owing to the scarcity of the supply of this remedy, the results fell short of our expectations. Since 1900 our institute has been preparing the serum to meet with the constant demand. For the patients actually suffering from the disease, comparatively large quantities (200-240 cubic centimeters) are required for inoculation, and although we are not in a position to ascribe to the pest serum a value as ab-

solute as to the diphtheria serum, there is no doubt of the efficacy of the former remedy. The following facts demonstrate this:

A series of experiments was conducted in the Tainan isolation hospital (Formosa) with the view of comparing the results of the serum with those of an early extirpation of the buboes and general systematic treatment. Of the 56 patients treated by the latter method, 35 (62.5 per cent) died of plague, while out of the same number inoculated with serum the death rate was only 33.9 per cent. From these experiments it is seen that the use of serum reduced the death rate by about one-half. Our experience during the epidemics in Japan has shown that the most effective

FIG. 9.—Pest bubo of the axillary and cervical glands (case recovered).

treatment is that in which both serum inoculation and extirpation of the buboes are performed in as early a stage of the disease as possible.

Rats as the Propagators of Plague.—The fact that rodents are always closely connected with an outbreak of plague (in all times and places) admits of no dispute. The epidemics in Japan have invariably been traced to rats.

Obviously these animals have a high susceptibility to the pest infection; their habits also constantly bring them in contact with filth in which the plague germ is present, besides which they feed upon one another. These facts must favor the spread of plague. The finding of human victims of the pestilence is almost invariably preceded by the discovery of plague-infected rats. Hence the killing of rats must be resorted to as the

first and most important step in the prevention of an epidemic. In the first outbreak in Osaka and Kobe the pestilence was gradually stopped by an urgent effort directed at destroying these rodents; and the ones in Tokyo and Yokohama were confined to a small area by the strict enforcement of these same measures. The number of rats killed in Tokyo since 1900 and up to the present time amounts to the enormous figure of 4,820,000—that is to say, the average is more than 800,000 a year. In other words, if these dead rats were laid side by side they would extend for a distance of over 75 miles. The price paid by the local government for these animals, which were bought from the people, in Tokyo alone has amounted to 160,000 yen.

However, the extermination of rats is complicated by the fact that the rodent increases at an enormous rate; as a rule within one month of pregnancy the female gives birth to five young ones at a litter, and the young reach puberty and become pregnant at the age of three months; thus these animals multiply in a geometric progression. Furthermore, if rats are destroyed by artificial means, such destruction only lessens the struggle for existence and then the rate of multiplication is much increased. In Tokyo more than 4,800,000 rats have been killed; yet we can hardly notice any considerable decrease in the number of these animals.

In Japan, for killing rats, poisons such as arsenic and phosphorus, together with traps, are chiefly used. The typhoid bacillus of the rat, which has been effectively used for killing field mice, has been found useless for house rats and therefore we no longer employ it.

Someone has offered the following suggestion for the disposal of the usual breed of household rats (*Mus rattus*), which unfortunately is the species most liable to be attacked by plague. This suggestion is to introduce *M. decumanus,* which is a persistent enemy of *M. rattus,* and which is comparatively more resistant to the infection. Such a suggestion appears to me impracticable, for from my actual observation it is evident that so far as epidemics in Japan are concerned the *kind* of rat has been of very little importance in propagating plague. Moreover, the results of biological researches tend to confirm the fact that although two distinct species of rats are found, the one most prevalent in Japan is a race which is a mixture of the two and which is also susceptible to plague. Such a fact rather contradicts the assumption that the two species are natural enemies to each other. Therefore, the above recommendation can hardly be taken as a basis for preventive measures against plague.

The best way to destroy rats in connection with the restriction of pest is to prevent their abiding in or at least to expel them from human habitations. In order to accomplish this purpose I suggest that all buildings be rebuilt according to a plan which will serve this end. This par-

ticularly applies to Japanese houses. because in most cases the latter are built of wood, and such buildings are liable to provide quarters for rats. I understand that the United States is planning a reconstruction of "China-town" in San Francisco. I highly approve of such a step in view of the situation of that port, which is constantly threatened with a plague invasion. In Manila, also, the cause of the recent fortunate decline of the plague epidemic, I believe, can chiefly be attributed to the rebuilding of the city since the islands became a possession of the United States.

In Japan, the insular territory of Formosa, which has been invaded by plague, is now being surveyed by the sanitary officials, and the buildings in the central part of Tainan City have already been reconstructed so as to keep the rodents out. As a consequence, the ravages of the pestilence are now practically confined to the villages or to groups of unsanitary habitations of the natives, who live with the rats and permit these animals to flourish.

The following table demonstrates that during a plague epidemic the number of infected rats runs parallel with that of the patients discovered:

	Osaka.		Kobe.	
	Patients.	Infected rats.	Patients.	Infected rats.
May	1	1	0	2
June	0	0	0	0
July	0	0	0	0
August	0	0	2	3
September	0	5	8	11
October	6	39	4	17
November	45	119	36	151
December	82	634	40	405

The number of rats examined during the past year in Osaka amounted to 1,195,116. Of these, 19 infected animals were found previous to May, making a total of 817 in all. In Kobe 553,616 rats were examined; the number of infected ones can be ascertained from the table. From this it may be inferred that the prevalence of the human infection bears a direct proportion to the number of infected rats found, and that the extent of the epidemic may be known approximately by the area of the localities in which infected rats are encountered.

Our attention is particularly directed to the fact that the fiercest ravages in every epidemic are evidenced in winter rather than in summer. This may be due to the resistance which the pest bacillus has to cold, although it appears that this point needs further consideration. A particularly interesting fact is that in both Osaka and Kobe the number of infected rodents found during the last two months of 1905 was very large as compared with the number of plague patients, and also the statistics up to the middle of January of this year show a remarkable feature in that there were 240 infected rats against three patients in Kobe, and 179 against nine patients in Osaka.

During the present epidemic I have had opportunity to make close observations as to the prevailing conditions, and have discovered an interesting fact concerning the habits of the rodent. Rats generally live on the ceiling below the roof, but in winter they change their abode by removing to the ground just below the floor. Therefore, in order to discover the openings which harbor the rodents, the ground should be dug to a depth of 1 or 2 feet, the rat-holes are thus exposed and the animals can be exterminated. This method, owing to the subterranean habit of rats in winter, invariably secures a great number. These animals are gregarious and consequently, if one of their number becomes infected in the winter quarters, then many must inevitably fall victims to the disease,

FIG. 10.—Infection of left submaxillary gland before the abscess was incised (case recovered).

but obviously there is less danger from rodents which live underground and apart from human habitation than there is from those dwelling in the houses themselves. It is for this reason that during winter epidemics a very large number of infected rats, as compared with human patients, is encountered.

The weak rodents are constantly menaced and frightened by the strong ones, so that the individuals which have been attacked by plague must maintain constant vigilance so as to be able to flee from their pursuers. As a weak rat has not sufficient strength to climb a fence or to reach any considerable height it is obliged to wander on the surface of the ground, thus providing for the spread of plague.

The large number of children who are infected by playing on the ground would seem to emphasize the fact that in this situation the bacillus is most readily encountered. The following table shows the number of children infected with plague during the winter epidemics:

Number of Patients.	1900. Osaka.	1905. Kobe.	1905. Osaka.
Total patients	144	90	134
Patients under 15 years	56	36	51
Percentage	38 8	40.0	38.6

From the above it will be seen that the number of patients under 15 years of age is more than one-third of the total. The subterranean and gregarious habits of rats, the sowing of the plague germ on the ground, and the large numbers of young patients—all of these are closely connected with winter epidemics.

It is apparent that measures for killing rats must of necessity involve the application of biological knowledge bearing on the habits of these animals, but our knowledge in this respect has yet to be perfected. The methods of destruction used in Japan today consist in the use of poison or of traps. Such means have only a temporary effect and the results of their use can not be considered to be of sufficient permanence to root out the evil. The destruction of rabbits in Australia was undertaken in such a way as to produce a permanent effect and we have much to learn from the method involved. It was based on the fact that the rabbit is a polygamous animal and therefore if as many females as possible could be destroyed by artificial means, the end would be a struggle among the males for their possession. The result of such a practice, of course, can not be expected in a brief period, nevertheless it is of a permanent character. I suggest that something of this nature be planned for the destruction of rodents.

In conclusion I desire to suggest what I consider to be an ideal plan for combating plague. I believe that the fatal pestilence, however obstinate its ravages and terrible its effects, could be fought and vanquished by the persistent efforts of man and I also believe that where human endeavor, backed by money, is determinedly directed against it, it must yield. But the efforts, however laborious, the money however vast, can be of no value unless they be accompanied by the application of scientific knowledge. The danger of plague invasion through open ports must increase in proportion as international commerce progresses and maritime enterprise advances. Again, where man has fixed his abode the rodents accompany him to share it; and the unwelcome creature becomes the cause

of the dreadful evil. In ports which vessels from infected regions frequent, an epidemic of the pestilence may not be difficult to exterminate. But if infection after infection is repeated from fresh importations the expenditure of large sums of money and much tedious effort become involved. In regions like India and Southern China, plague appears to be deeply rooted, prevailing almost incessantly for several years and during each year attacking more than 200,000 victims. It is apparent that we can not avoid the danger of invasion by the pestilence at any moment, so long as we do not cease intercourse with these regions. To be content with the mere placing of quarantine on the incoming vessels from these places or of enforcing rat killing and other sanitary measures in the open ports seems to me to be but imperfect protection. Why not extend the combat to the source of danger and destroy the cause of the evil permanently? Plague is not only objectionable to the people of one locality but it is an enemy of mankind in general. All civilized nations must fight this common enemy. I believe there should be an international conference to discuss a plan to collect money and to organize an international army to combat and vanquish this disease wherever it appears. Expeditions should be sent to the interior regions of India and south China. The cost of such an enterprise would be only a small part of what the civilized nations are constantly expending in keeping armies and navies. Even the amount which every country is spending for the prevention of the pestilence would suffice. My suggestion only lacks a leader, and I see that the United States, one of the greatest nations of the earth, has such a leader in the person of its President, Theodore Roosevelt, who has already done so much for humanity and whose noble works are being admired by the whole world.

CLINICAL REPORT.

AN UNUSUAL TRANSMISSION OF MEASLES. CASE REPORT.

By A. S. Bleyer, M. D., St. Louis.

Baby T. C., age, 12 days. Diagnosis, measles, efflorescence appearing on the 7th day of age. I delivered this baby, April 2nd; on April 9th, a perfectly typical and intense rash of measles appeared; coryza and deeply injected conjunctivæ and slight cough present. The coryza and cough had been noticed two days before, when the child was five days old, and were spoken of.

The mother had been in excellent health throughout her pregnancy, and stated that she had had measles when a baby. No case of measles could be found or learned about in the neighborhood after a search was instituted among the neighbors, nor any bona fide traceable source of measles beside the following:

On March 30th, at 9:00 p. m., I received two calls almost simultaneously, one of them to a baby in the terminal stage of efflorescence of measles, the other to a woman about to go into labor. The former case was near Vandeventer and Washington avenues, the other near 14th and Chambers streets. The hour was late, and fearing to be long detained at the latter place, I called first on the baby with measles, this address being directly on my way to the confinement case. I did not remove my overcoat, but made a throat examination with a spoon-handle, after which I washed my hands with soap and water, and hurried away, having remained in the room but a very short time.

I arrived at the house of the second patient about forty-five minutes later, removed overcoat and coat in a room adjoining that of the woman, washed my hands very thoroughly, using bichloride solution and nail-brush after soap and water. I then put on a gown and made an examination. The sac was found ruptured and the head was touched with the index finger.

I left the house within a few minutes and did not return until April 1st (two days later) when no examination was made. Patient was confined April 2nd. Puerperium was afebrile and uncomplicated.

April 14th. Rash has disappeared from baby, the course of measles was typical in detail and uncomplicated. To-day there is some talk about three children living across the street, half block west, who were sick several weeks ago, it is said, with measles.

The case of measles near Vandeventer and Washington avenues, was

not visited again, and I did not come in contact with any case of measles from March 30th until after the eruption had appeared in the second case.

Argument:—If the infection was carried in this case by me, the question that arises is, where did the contagium remain for three days before the baby was born? Direct vaginal or intrauterine implantation does not seem possible, and it is not probable that an intermediary person or the room adjoining the woman could have retained the poison for this length of time. I nevertheless feel morally certain that the infection reached this baby through me.

Note:—The question as to the validity of the diagnosis of measles in this case is of course imminent; I do not think that there can be any question but that this was a true case of measles. However, I wish to state that a child of two years, that had never had measles was kept in the same room and did not contract the disease. Another child living on the other side of the porch that had been exposed did not develop measles.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

ACHYLIA GASTRICA.—Schuetz (*Wiener Klinische Wochenschrift,* No. 15, 1907.—Achylia gastrica is a symptom complex, characterized by the total absence or marked reduction of hydrochloric secretions. The labsecretion is as a rule markedly diminished. This is not so true of pepsin. A total absence of the last in achylia has as yet not been absolutely demonstrated. This disturbance in secretion of the gastric mucous membrane will be caused through nervous influences, through variations in the make-up of the blood, but more often through diseased conditions of the mucous membrane.

After the Ewald-Boas test breakfast, the stomach of the achylia gastrica patient may show a variation in capacity. As a rule, however, there is usually a large amount of contents. This cause seldom occurs before puberty, usually after fifty years of age.

The author is not convinced that there is a tendency to reduction of hydrochloric acid in old age. The existence of a chronic diarrhea, or a tendency of diarrhea should always lead one to suspect the possibility of achylia gastrica. In the treatment of these cases, the author gives hydrochloric acid, usually with pepsin, a soft diet. The greatest care should be used in the preparation of meats and vegetables and potatoes are to be used only in the form of puree. The use of meats should be restricted, because, as a rule, marked symptoms are produced thereby.

In cases of accompanying diarrhea in addition to the hydrochloric acid, tenalbin is used. Of course, in anemias and neurasthenia, therapeutics should be applied to suit the case.

THE COURSE OF UROBILINURIA IN TYPHUS ABDOMINALIS.—Rubin (*Muenchner Med. Wochenschrift,* March 12, 1907).—Prompted by the publications of Hildebrandt, the author has carried out a series of observations with reference to urobilin in the urine of typhoid patients and presents here a series of interesting charts showing the variation of urobilin in the urine of these patients.

His experience leads him to conclude that the test is a valuable one in the diagnosis of typhoid fever and states that when excessive urobilin is in the urine of a beginning febrile disease that might be taken for a typhoid, the probabilities are that it is not such. The urobilin varies in the urine with the severity of the disease and with the character of same. It is found absent in the early stages of typhoid and begins to reappear with convalescence. The return of urobilin to the urine indicates a favorable course, while the sudden disappearance of urobilin in convalescence may indicate a relapse.

Epidemiology of Tetany.—Mattauschek (*Wiener Klinische Wochenschrift,* No. 15, 1907).—During the past ten years there have been marked developments in the pathology of tetany. It has been determined that some cases are due to a functional disturbance of the parathyroid glands. Some cases are attributed to acute infectious diseases, gastro-intestinal disturbances, maternity, but by far the largest group are idiopathic. It was found by Pinalis that this class of cases seem to occur in epidemics, occurring at certain seasons and in certain localities.

The author has made a careful study of the cases of tetany that have been reported in the different garrisons throughout Austria and found in two of the garrison hospitals in ten years a record of twenty-one cases, sixteen of which occurred in the months of February, March and April and five of which occurred in shoemakers and tailors. He found that it was not as frequent an occurrence in army as in civil life, which he attributes to the strong constitution of the soldier. The cases were more frequent in certain sections of Austria than in others. The Southern provinces along the sea, for instance, were found practically free from tetany and those in which goitre is quite common were also practically free from tetany. In view of the fact that soldiers come from different sections of the country, that in spite of this fact, certain provinces show by far the majority of tetany cases that it is due rather to the location than to the individual.

Demonstration of Tubercle Bacilli in the Urine Through Animal Experiments.—Bloch (*Berliner Klinische Wochenschrift,* April 29, 1907).—The present method of inoculating guinea pigs for diagnosis of tuberculosis takes at least six or eight weeks before the experiment is complete. The author has used the following original method:

Urine well sedimentized and sediment suspended in physiological salt solution. This then injected subcutaneously in the neighborhood of the groin after which the lymph glands in this region were crushed by grasping skin and flesh and making firm, grinding pressure. After ten to twelve days' swelling of the glands occurred, they were excised, found caseous, smears made and the tubercle bacillus searched for and found in considerable number. The crushing and maceration of the lymph glands is the important point of the procedure.

Cause of Icterus Neonatorum.—Knoepfelmacher (*Wiener Medizin Wochenschrift,* No. 19, May 4, 1907.—The author has sought to find a cause for the common phenomenon of jaundice in the newborn. The theories of the absorption of bile from the meconium, the destruction of the red blood cells with a setting free of pigment, the obstructive icterus due to blocking of the biliary channels by pressure, infection or other means, are all discussed and rejected because experiment does not bear them out.

In his own experiments the author found that the viscosity of the bile was considerably greater at birth than three or four days later. Since by a previous series of experiments it has been determined that the greater the secretion of bile the less viscid it becomes; the author therefore con-

cludes: that soon after birth, the liver cells, on account of an increased blood supply to that organ, take on an increased activity with an increased secretion of bile. That the very viscid bile already in the capillaries hinders the outflow of this later product, the intracapillary pressure rises and as a result the bile is partly absorbed from the capillaries into the circulation causing jaundice.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

LOCAL IMMUNITY TO TETANUS IN INOCULATED RATS TREATED WITH EOSIN.—Hidego Noguchi (*Journ. of Experim. Medic.*, Vol. 9, No. 3).—Flexner and Noguchi found in their work on the effect of eosin application to wounds in which tetanus spores were injected, published about a year ago, the peculiar fact that the removal by operation of the spores from the healed and scarred wound did not cause tetanus. It appeared, furthermore, that this condition obtained not only in the inoculated extremity, but also in the one of the other side. This suggested to Noguchi the existence of a local or perhaps even a general immunity, produced by limited growth and toxin production of the growth at the site of inoculation. The limitation of the growth is the effect of the eosin treatment. Experiments made in this direction, that cannot be detailed here, prove the correctness of this assumption. They established that under the influence of eosin a local immunity to tetanus infection or intoxication is produced. That this immunity is due to the production of antitoxin in the local process is shown by the general immunity more or less observed. Which cells are the sources cannot be determined, though Noguchi thinks of the connective tissue cells, or the endothelia of the lymphatics. The general immunity must be explained by the absorption of antitoxin from the local focus. The cells of the latter, in order to show a local immunity, may have undergone a physiological change, making them unsusceptible (*giftfest*) to the action of the specific antigen. Upon what changes in function or structure this quality depends is altogether unknown and all speculation in this direction must remain hypothetical. Analogous phenomena have been observed before; we known through Pfeiffer and Marx the organs in which the antibodies for the cholera vitrio are produced, through Wassermann and Takaki the fixation of tetanus toxin by brain and certain other tissues, and the local production of antibodies by pleural and peritoneal endothelia for the typhoid bacillus. Theoretically, all the observations are very similar and prove that antibodies are produced locally. All of these observations call attention to cells that have been considered as unimportant in their production. Noguchi's experiments show particularly that antibodies can be produced by other cells than those acted upon by the antigen, in tetanus by connective tissue, where the nerve tissue has an especial affinity for the antigen.

About the Nature and Origin of Tumors.—Westenhoeffer (*Berl. Klin. Wochenschr.*, 1907, No. 19).—Ribbert, as reported in the Journal sometime ago, formulated the conception that the growth of tumor cells in the animal organism was in all directions identical with the multiplication of parasites. If the independent growth, especially of malignant tumors, is considered the analogy, one could say homology of these phenomena cannot be denied, and Ribbert logically concluded his discussion by calling cancer cells autochthonic parasites. There is no doubt but that the conception of parasitism is based on the observation that the life of one organism is possible only by the utilization of the living substance of another organism. As far as the conception of parasitism is theoretically concerned the fetus in utero is a parasite. In this way of considering the nature of tumors simply the name is changed; no explanation of the causes of this parasitic transformation is yet possible. While Ribbert remains within the limits of logic and actual facts (and really his way of looking at tumors expresses admirably their clinical and pathologic character biologically), Westenhoeffer loses himself in speculation; his ratiocination is based only on hypotheses and assumptions; it neglects facts that are as firmly established as facts can be for the time being. He is correct in asserting that Ribbert's name for tumor cells, "autochthonic parasites," only expresses the result of direct observation, but does not throw any light on the intime nature of the process, as said above. But Ribbert went as far as with safety he could go theoretically. Westenhoeffer goes much farther, and is, in doing so, compelled to deny or forget things that with our present knowledge cannot be proved as not existing. That is, the specificity of the tumor cells in the great majority of cases, not only the retention of morphologic identity with normal cells, but also of their physiologic and biologic qualities. Eisenberg's famous work on thyroid-carcinomata alone makes such an attempt as that made by this author, a priori, futile. Hypothetically assuming (pretentiously giving as evidence very indefinite results of chemical, physical and other investigations of the physical, chemical and biologic difference of tumor cells from normal cells, made by Blumenthal, Petry, Wollf and others) an absolute change in their intimate nature of tumor cells from normal cells, he finds it plausible to postulate as the origin of tumor cells an atavistic return to a primordial cell (urzelle). This, in his opinion, is possible through continuous influences acting on normal cells, releasing them from the limitation conditioned by their arrangement in normal complexes, finally resulting in the arising of cells with all of the mysterious qualities of the "urzelle," that in the beginning in this respect (he forgets to think of it) is not an "urzelle," because it only arises and lives and becomes a tumor in the organism in which it has become an "urzelle." The impossibility of transplanting tumors from one animal to another species, the beautiful work of Ehrlich and his ideas about the inner nature of this fact, do not form an obstacle for at least making worthy of consideration the possibility of return to primordial cells. Kelling's theory of the tumor origin, the ingestion of embryonal cells of animals used as food (eggs, etc.), is less fantastic. The paper of Westenhoeffer appeals to the reader at first as a fine satiric exemplification of the disappointment

that we gradually feel overwhelming us in recognizing how limited our knowledge is and how limited our means are to widen it. The pity is that it is not a satire, that it is published as a subject calling for attention and worthy of careful investigation. It is an interesting contribution to our literature, showing the ways the mind may go, when exact experimentation and study are neglected. It exemplifies the care needed to be taken in the judgment of the revolutionizing discoveries, that the same author has published about the pathology and infectivity of epidemic meningitis, tuberculosis, etc.

The Action of Sunlight Upon Bacteria With Especial Reference to Bacillus Tuberculosis.—John Weinzierl (*The Jour. of Infect. Dis.* Supplement No. 3, May, 1907).—Having convinced himself that the method used in testing the bactericidal action of sunlight and the results obtained do not indicate the full power of the agent, Weinzierl devised a procedure more suitable. The working with cultures is objectionable on account of absorption of light by the medium and the glass of the tubes and vessels used. Preferably the bacteria are planted directly on glass or paper and directly exposed to the light. In this way the non-spore forming bacteria, for instance b, tuberculosis, diphtheriæ, typhosus, choleræ Asiaticæ, etc., are killed in periods varying from 2 to 10 minutes. The time is lengthened when bacteria are not homogeneously distributed, but clumped or grouped together. Saprophytic bacteria of the air require a much longer time. For b. tuberculosis the violet end of the spectrum is the more bactericidal. The author's results by direct exposure of bacteria to sunlight indicate that the latter is a much more powerful germicidal agent and consequently a more important hygienic factor than it has heretofore been considered; that the bacteria, when freely exposed to sunlight, are killed in 1-5 to 1-20 of the time that was formerly considered necessary.

Coronary Arteries and Heart Muscles. Anatomic and Experimental Investigations.—G. Hirsch and V. Spalteholz (*Deutsch. Med. Woch.*, 1907, No. 20).

The Suture of Blood Vessels. Implantation and Transplantation of Vessels and Organs. An Historical and Experimental Study.—Stephen H. Watts (*Bulletin of the Johns Hopkins Hospital*, May, 1907).

Both papers represent classic work. Hirsch and Spalteholz have, by ingenious methods and experiments, demonstrated the falsity of the teaching that the coronary arteries are end arteries. The experiments formerly made to produce infarcts by occlusion of the vessels are so contradictory that no conclusions can be drawn from them. By a new operative procedure the authors ligated the descending branch of the left coronary artery in dogs and monkeys. The infarcts were studied by injection and by making the injected organs transparent by means of a benzol and carbondisulphite mixture originated by Spalteholz. In this way the presence of a rich anastomotic connection of the arteries is easily demonstrated, and at the same time the explanation given for the location of

the infarcts and their comparative insignificance as to the obstruction of the main vessel. The reading of this lucid and ingenious report is a rare delight.

The same obtains for the paper of Watts, that comprehensively deals with the history of vessel-suture and the report of original investigations. It is impossible to detail the methods worked out, to go into the single lines of experimental investigation that by the perfection of the operative method was made possible. For practical purposes a great step forward is made by an undoubtedly successful and easy procedure of suturing, anastomosing and transplanting vascular structures with absolute certainty of success and function. It is only natural that the work led to an intense study of the transplantability of organs, and the results have been absolutely novel and surprising. The reversion of the circulation in a thyroid, or the excision and reversion of both kidneys are only instances that show what multiple possibilities the new methods can lend in the study of so far not understood physiological phenomena or biologic processes. Part of the material was known from scattered publications during the last two years. In its entirety it is an imposing result of work, so original and at the same time so delicate that high admiration is due the author. A review of the contents would fill several pages, and even then would not be able to represent the paper. The paper must be studied in its original.

Rapid Method of Demonstrating Tubercle Bacilli by Animal Inoculation.—Arthur Bloch (*Berl. Klin. Woch.*, 1907, No. 17).—As is well known, the demonstration of tubercle bacilli in injected material by injecting the latter subcutaneously into guinea pigs is, although highly reliable, nevertheless a method that takes four weeks or longer ordinarily, before a result is obtained. Bloch utilized the work or Orth and Wyssokowitsch, who injected into the carotid of rabbits tubercle bacilli. Such injections are borne without consequences. If, however, before the injection, a sound was introduced and small lesions of the valves or of the aortic intima were set, the subsequent injection led invariably to a productive endocarditis of tuberculous character. Orth drew from these experiments important conclusions as to the etiologic meaning of a disposition. He obtained the same result later, in rabbits, by injecting intravenously tubercle bacilli and injuring a kidney by squeezing it; a renal tuberculosis followed. Bloch tried in an analogous way to create an artificial disposition of the inguinal glands of guinea pigs; after the injection of the suspension of the suspicious material under the skin of the guinea pig, into the left or right inguinal region, he firmly squeezed between his fingers the inguinal fold of the animal. In normal animals, the glands cannot be palpated through the skin, but if the pressure is exerted carefully around the place of their location, they are with certainty injured. The result of this procedure has been in experiments and in actual cases successful; while without it the glands begin to enlarge only after about three weeks, in the injured glands they reach often in nine days the size of a pea. Lately it has been reported, that even after 7 days, where no enlargement is sometimes observed, the excision of the glands

will reveal the presence of tubercle bacilli in smears and in sections. The practical advance made by this method is exceedingly great. In a case of suspected vesical tuberculosis, where microscopically the urine did not show baccilli, the reviewer has, in nine days, been able, by this method, to prove the correctness of the clinical diagnosis.

NOTE ON AN ORGANISM FOUND IN YELLOW FEVER TISSUE.—Stimson (*Public Health Reports*, May 3, 1907).—Stimson examined after Levaditi's method the brain, liver, head and kidneys of a case of yellow fever. In the kidney he found a very definite organism of the structure and appearance of a spirochaete. It was confined to the cells of the tubules and to their lumina. None were found in the blood vessels. glomeruli or interstitial tissue. Their distribution over the tissue was irregular; while in some areas none were found, in others large numbers were crowded together; again they occurred scattered and singly. In another kidney, preserved in bichloride, no definite organisms were found, but structures very much resembling them. With the suggestion by Schaudinn and Novy, that possibly or probably yellow fever is a spirochaete infection, the observation reported will give the stimulus to wider examination of suitable cases. So far, of course, this single case cannot be utilized to form an opinion.

DIAGNOSIS

IN CHARGE OF

ALBERT E. TAUSSIG, M. D.

PAIN DUE TO ORGANIC AND TO PSYCHIC CAUSES.—Coppioli (*Riform. Med.*, No. 15, 1907).—It is often difficult to be certain whether pain produced by palpation is due to a local organic lesion or merely to a general neurotic condition. The observation of the behavior of the pupils will often enable one to distinguish between these two kinds of pain. Where the pain is due to a local disturbance, its production will be accompanied by a dilation of the pupils, and the amount of suffering will be shown by the degree and the rapidity of the pupillary dilation. Pain of psychic origin, on the other hand, is not accompanied by pupillary change.

PERCUSSION OF THE HEART.—Goldscheider (*Muench. med. Wochenschr.*, 1907, No. 20).—In the recent German Congress for Internal Medicine, Goldscheider again discussed his method of extremely gentle percussion. He advocated the use of a glass rod with one end covered by rubber tubing. The rubber-covered end of the rod is placed upon the chest, the rod held in a slanting position and percussed by means of a finger at a point some distance from the rubber-covered end. The advantages of this bit of apparatus are that the percussion is confined to a small point on the thorax wall and that even a relatively strong stroke on

the part of the finger produces but a faint sound. The direction in which the sound waves penetrate the thorax depends upon the direction in which the rod is inclined. Ordinarily it should lean so as to lie parallel to the boundary to be determined. In percussion along an intercostal space towards the heart, a dullness will be elicited when the rod is inclined towards the cardiac border, some time before the latter is reached. It is only when the percussion note is dull, no matter how the rod is inclined, that we are certainly at a point over the heart. The rod can also be conveniently utilized in determining the boundaries of abdominal viscera, of the pulmonary apices, etc.

A New Tuberculin Reaction.—Pirquet (*Muench. med. Wochenschr.*, 1907, No. 20).—At a meeting of the Berlin Medical Society, Pirquet, of Vienna, announced a new method of using tuberculin for diagnostic purposes. He was led to his method by an observation made in connection with cow-pox vaccination. It is generally held that revaccination, within a few years after the primary vaccination, is unaccompanied by any reaction. This, he holds, is not quite true and is based upon the fact that the site of revaccination is not inspected until a week or more has elapsed. If, however, the little lesion is examined within 24 hours, a slight reaction will always be visible. It takes the form of the production of a small papule; this he believes to be a specific antibody reaction and to indicate with certainty that the organism has once before been infected with cow-pox vaccine and therefore contains cow-pox antibodies.

He follows a similar procedure with tuberculin. A few drops of the fluid are placed upon the skin and the latter slightly scarified so that some of the tuberculin will be absorbed. If the patient is tuberculous or has ever been so, his blood will contain tuberculosis antibodies and he will react to the tuberculin by means of the production of a small papule at the site of vaccination. The older the patient, the less significant the reaction, since nearly every one has been tuberculous at some time. The most valuable results diagnostically should be obtained in children. He has found the reaction positive in all cases of tuberculosis in children except where there was miliary tuberculosis, tuberculous meningitis, or extreme cachexia. The most striking reactions were obtained in local infections, bone tuberculosis and scrofula.

Two objections to this method would seem to lie on the surface. Papules do sometimes occur after local irritation of the skin, without being the expression of a general reaction. Moreover, there is no way of controlling the amount of tuberculin absorbed by the scarified surface, so that the method might well be not entirely free from danger.

The Relation Between Diazoreaction, Bacteriemia and the Widal Test in Typhoid Fever.—Genken (*Muench. med. Wochenschr.*, 1907, No. 18).—As the result of a careful examination of a considerable number of cases, the writer concludes that, in cases of typhoid fever not treated by means of drugs, the diazoreaction and the presence of typhoid bacilli in the blood go hand in hand. The former occurs only when the latter is demonstrable. As the agglutinative power of the serum increases

the bacteria gradually disappear from the blood and when they have gone, the diazoreaction too can no longer be elicited. In cases, however, that have received salol, calomel or tannalbin, this parellelism does not hold, the diazoreaction not being obtainable even though the blood be rich in typhoid bacilli. The writer hopes that this observation may assist in the solution of the puzzling question regarding the nature of the diazoreaction.

The Examination of the Heart with Elevated Pelvis.—Stern (*Ibid*).—The patient is made to lie on his back, with the legs drawn up and the pelvis raised, by means of pillows or otherwise, so that the body has an inclination downwards of 30 degrees. In this position, the upper border of the area of cardiac dullness and the apex-beat are dislocated upwards, but neither the right nor the left boundaries are altered. The right border of the area of relative cardiac dullness can be much more easily and sharply made out, since the right heart in this position approaches more closely to the chest wall. The cardiac sounds, too, become more distinct, almost inaudible mitral regurgitant murmur in particular becoming more readily recognizable. On account of the passive engorgement of the veins of the neck, a venous pulse can be detected when it would escape observation in the usual positions.

The writer has made a number of comparisons between the cardiac outlines obtained by percussion in this position and by means of the x-rays. There is a striking conformity.

The Functional Examination of the Heart.—Fellner and Ruvinger (*Berl. klin. Wochensch.*, 1907, No. 16).—The writers have tested Katszenstein's method in some 70 cases. The systolic blood-pressure is determined by means of the Riva-Rocci apparatus first under ordinary conditions and then after firm digital compression of both femoral arteries. The normal heart responds by a rise in blood pressure of 5 to 10 mm. If there is considerable cardiac hypertrophy, the rise in pressure may be from 10 to 20 mm. If there is cardiac weakness, this rise in pressure fails to appear, indeed there may be a fall of from 5 to 15 mm. In cases of hypertrophied heart, in which the rise in pressure was very slight, they consider this fall of pressure as indicative of a beginning diminution of cardiac strength. Cases of anemia and chlorosis, in which the heart is generally considered to be enfeebled, showed a fall in pressure that often exceeded 10 mm.

In spite of the fact that Katzenstein's method has apparently met with general approbation, one source of error must not be forgotten. It is often impossible completely to compress both femorals without producing considerable pain. The latter almost always leads to a rise in blood-pressure, quite aside from the condition of the heart, and tends to obscure the significance of the observations. Under these circumstances only a fall in pressure, or at least an absence of the usual rise, is of significance.

A Modification of the Phenylhydrazin Test for Sugar.—Gruenewald (*Muench. med. Wochenschr.*, 1907, No. 15).—To 10 c. c. of wine,

add a solution of 1.2 g. sodium acetate in 6 c. c. warm distilled water and 2 drops of acetic acid. Then add 0. 6 g. Phenylhydrazin hydrochlorate and evaporate the mixture on the water-bath to 5 or 6 c. c.; cool immediately. Even traces of glucose give a prompt and plentiful precipitate of characteristic crystals. The method is said to make possible the detection of 0.03 per cent. sugar.

The Widal Reaction.—Goethlin (*Hygiea,* 1907, No. 3).—The writer again calls attention to the fact, too often ignored, that no Widal reaction should be declared positive unless agglutination takes place in a dilution of 1:100. A dilution of 1:200 is still better. He does not unreservedly commend Ficker's modification.

The Diagnosis of Hepatic Abscess.—Axisa (*Zentralbl. f. inn. Med.,* 1907, No. 13).—A marked leucocytosis is nearly constant. In the urine, the amount of urea is reduced and that of ammonia increased, the latter being 9 to 24 per cent. of the total nitrogen. If levulose be given by mouth in this disease, it appears in the urine where it can be readily recognized. In doubtful cases, the existence of these three symptoms justifies an exploratory laparotomy.

THERAPEUTICS.

IN CHARGE OF

Wm. Engelbach, M. D.

The Effect of Nicotine Upon the Cardio-Vascular System.—Grassmann (*Munch. Med. Wochen.,* May, 1907).—From the vast amount of literature upon this subject combined with the author's personal experience the deduction is made that the use of tobacco produces serious conditions in the cardio-vascular system. Its use during the age of development is given as one of the potent causes for arterio-sclerosis. This process takes place more in the peripheral arteries at first; later after the prolonged use of the heart muscle becomes affected. This is exhibited by the increased pulse rate, the arrythmia, and the tobacco-angina. The duration of the use of tobacco is more an important factor regarding the condition of the heart muscle than the subjective symptoms Positive objective symptoms, however, as shown by Traube, can be demonstrated in the form of constant increased pulse rate, increased blood pressure, and hypertrophy of the heart. That nicotine poison has actually produced chronic myocarditis has been proven by Rosenbach, Faverger, Lewin, Kunkel. The history of the use of tobacco is present in nearly every case of organic disease of the heart muscle. The author pleads for a more serious consideration of these symptoms from the use of tobacco, and advocates an earnest discouragement by the profession for the indulgence in this pernicious habit.

The Action of Chloral, Dorimol, Hedonal, Isopral, Upon the Heart and Blood Vessels.—Mayor (*Therapeutische Monatshefte,* May, 1907).—In this very excellent and extensive article the author considers the action of chloral, dorimal, hedonal, isopral, in detail upon the cardiovascular system. The conclusions drawn are based upon experiments upon different animals (rabbit, dog) and careful comparative observations upon man. In proportion to the untoward effects of these drugs chloral produced the most marked, dorimol next to chloral, and hedonal and isopral the least. It was difficult to establish much difference between the latter two, but they considered hedonal slightly less depressant than isopral. The difference between the ordinary dose used as a hypnotic and the fatal dose could not be definitely stated for man from the deduction of the experiments on animals. The hypnotic dose of hedonal, as given by Dreser as .5 gm. (grains 7), is considered too small. They did not agree with the Russian authors that isopral and hedonal were both less toxic and more effective than chloral. They found, however, that hedonal and isopral, as used in practice, are much less deleterious than chloral. Dorimol differed so little from chloral that they were unable to state positively that it had any disadvantage over the same. Those conditions in which there existed an actual cardiac failure, either of an acute or chronic character, presented positive counter indications for the use of chloral. Trional, on account of its solubility, would be indicated instead of any of the above drugs in these conditions. Morphine, on account of its anti-spasmodic effect, was considered perhaps superior to either of the other groups of drugs. Chloral, when not considered counter indiacted, was better than veronal, because it also modified reflex irritability, which is exaggerated by veronal. The advantage of isopral over hedonal was that it was more soluble, therefore quicker absorbed and easier to dispense.

The Cure of Consumption With Subcutaneous Injections of Oils.—Keyes (*The Antiseptic,* Madras, India, Volume III, No. 12).—This article considers the hygienic treatment of tuberculosis aided by the production of fat in the body, by means of hypodermic injections of oil. The author accepts as a general principle that tuberculosis can be prevented and cured in certain stages by increasing the defensive powers of the body. This means of increasing the fat is also enhanced by a diet which will promote the deposition of fat in the body. The habit of not eating fats leads to non-digestion, mal-nutrition, and hence tuberculosis. The blood in tuberculosis showed proof that the body in this condition is in need of oil. Claims are made that adipose tissue protects the vitality of other tissues and thus enables them to throw off disease. This tissue is also the greatest supply of nutriment to diseased and famished tissues. The poor indigestion of phosphatic salts in fat starvation is cited as a proof for the special indication for fat in tuberculosis. Savages and other races who in earlier days lived largely upon fat were remarkably free from tuberculosis. The civilized races now living upon farinaceous food are fast succumbing to this disease. Experimental investigations upon the dog demonstrated that subcutaneous injections of butter pro-

duced an increase of fat in the tissues. Oil increased cell formation. Connective tissue which heals organized tubercular processes is said to be derived from the fat of the blood which is increased by this treatment. The author claims that the injections of oil meet all of the pathological conditions of tuberculosis. He gives his technique in detail and reports cases cured by this means. In order to make the cure positive he advises the continuation of the fat diet during the life of the patient.

The Use of Pilocarpin for the Relief of Pruritis, Especially in Regard to Pruritus Vulvae.—Reid (*Medical Record,* May 25, 1907).—According to the author, pruritis is considered as a neurosis somewhat allied to neuralgia. Its similarity to neuralgia is due to the fact that it is periodic and may occur without any immediate cause. Holstern reported the use of pilocarpin for pruritus coincident with jaundice with favorable results. The author reports its use in pruritus from various causes with healthy effect. He began with 1-8 of a grain and gradually increases the dose if necessary. Combined with atropine (grain 1-120) it has been used effectively to prevent sweating.

A Comparison of the Effect of Aspirin and Sodium Salicylate on Rheumatism.—Roch, Geanneret and Alamuni (*Therapeutische Monatschefte,* May 1907).—These authors review the literature on this subject and give detailed reports on fifteen cases in which both sodium salicylate and aspirin were used. In these cases sodium salicylate was tried first without marked modification of the clinical course of the disease, after which aspirin treatment was instituted. Their practical conclusions are as follows: Sodium salicylate has a direct favorable action upon some cases of acute articular rheumatism. In some of their cases it seemed to have no positive effect. Four of the cases which were not affected by sodium salicylate immediately reacted to aspirin. Aspirin does not have the deleterious effect on the stomach or cause the early effects of salicylism produced by sodium salicylate. Nervous symptoms, such as headache, tinnitus, and delirium are less prevalent with aspirin treatment. Smaller doses of aspirin are required to produce the effect desired than sodium salicylate. They agree with Filippi and Nesti that these effects are produced by the slower and more constant absorption of salicylic acid from the aspirin than from sodium salicylate.

SURGERY.

IN CHARGE OF

MALVERN B. CLOPTON, M. D.

Future Results in Cancer of Stomach.—Hoffmann (*Mitt. a. d. Grenzgeb. Med. u. Chir. Gedenkband f. Mikulicz*).—Are we to expect better results in the future from the surgical treatment of stomach cancer, and is there a definite relation between the clinical duration of the disease and its operability? To decide these points the 655 cases in Mukulicz

clinic were studied. Many more men than women were observed (416 to 239), but the resected cases were about equally divided (87 men to 77 women). This is explained by the fact that enteroptosis and relaxed abdominal walls are most often observed in women, making the tumor evident to examination when still small, and these are the most favorable cases for the radical operation. Out of the 163 cases of resection of the pylorus 21 were free from recurrence after two years. In many cases it was possible definitely to establish the beginning of the trouble, in others not so easy until the operative findings were consulted. But in considering the facts it was shown that only 18 per cent of the cases consulted the clinic in the first 3 months of their illness, about 50 per cent in the first six months and only 83 per cent came to surgical treatment in the first year of their illness (an average of 10.3 months for all cases), a very late stage of the disease for satisfactory surgical care. About 4 per cent of the cases showed a tumor at the time of the first symptom. The great inadequacy of methods of stomach examination and the great danger of delay make it imperative that all doubtful cases be immediately sent by the general practitioner to a stomach specialist or to a surgeon. No doctor can say whether the tumor is or is not operable, and all doubtful cases should be given the advantage of an exploratory laparotomy. He shows that the average time from the appearance of the disease to the time of operation for cases whose pylorus was resected is 9.5 months, while the time of the non-radical operations was 11.2, a difference of 2 months in which the cases have passed over the stage of operability. The author concludes that we have little to expect from improved technique or improvement in the methods of stomach examination. The cases will seek a surgeon earlier only by a more thorough instruction of the general practitioner and the laity that salvation lies in seeking surgical aid early. There is a definite relationship between duration of the disease and its operability.

On the Diagnosis of Tumors.—Richardson (*B. M. & S. J.*, March 7, 1907).—With especial reference to the evil results of over confidence and delay, Richardson has written a characteristic article, which cannot be abstracted, but excerpts from it will give the author's intent. He states that one may be positive of a diagnosis of malignancy but less so of benignancy, and as our only recourse for the cure of tumors is surgical (excepting, perhaps, the x-ray and Coley's toxins) we lose the golden opportunity by delay in what we consider benign growths.

"Positiveness varies with the evidence, for some is positive and some is not. It varies with the observer's experience for it is sometimes broad and sometimes limited. It varies with common sense, for some observers have this quality and some do not. Finally, positiveness based upon truth, and accurate observation is an attribute that can be cultivated to high perfection. * * * Preventable errors of all kinds in the practice of surgery, especially the gross and hard to excuse—whether of diagnosis, technique or after treatment—occur as the result of overconfidence rather than of ignorance. * * * In the diagnosis and treatment of tumors, the most desirable because the most beneficial proposition may be ex-

pressed I think, as follows: All tumors should be regarded as malignant until they are proved benign. No tumors can be proved benign while they are still in the body. Therefore all tumors should, if possible, be removed. * * * The breast tumor cannot at any age, and especially after the age of thirty, be diagnosticated as benign with an accuracy sufficient to permit indefinite delay. * * * There are worse evils than those of unnecessary operation, no matter what may, in a single case, happen. Of the real calamities of surgery, there is none greater in the aggregate than the palliative, let alone, or even half-hearted treatment of malignant disease. True, a small percentage of explorations prove unnecessary, a small number may show inadequate study, or prove careless deductions; a small number may increase suffering or cause death, and yet the sum total of good accomplished would be greater in carrying out a policy of universal and indiscriminate surgical intervention in the treatment of doubtful tumors, than in a policy of universal palliation. * * * The correct diagnosis of the great majority of pelvic tumors is comparatively easy. The correct diagnosis of some pelvic tumors is beyond human power. * * * Let the surgeon look upon every neoplasm, no matter how innocent it may appear, as a possible nidus of malignancy, and let him treat it on the principle that it is malignant until proved benign, and finally, let him, in his methods of extirpation, whatever his belief may be, act at least upon the theory that malignant disease is in the beginning a local affection."

Subdeltoid Bursitis.—Painter (*Bost. M. & S. J.*, March 21, 1907).—Four cases of operative removal of the bursa are reported with perfect functional results. The incision is made over the tip of the shoulder, the deltoid separated in the direction of the fibres and the bursa is usually easily located, if it is at all thickened, just beneath the sheath of the muscle. It is dissected out, the fibres of the muscle closed with catgut and the skin closed. This is the procedure recommended in cases of long standing. The results have been far better than with the manipulative method, the patient being relieved of all pain immediately, is able to use the arm in three weeks, a much shorter time than is possible for manipulated cases. The bursas were all filled, the contents varying from sebacious-like material which contained much calcium salts, to clear fluid. In three cases the x-ray gave a shadow of the bursa.

Local Use of Magnesium Sulphate in Inflammation.—Tucker (*Thera. Gazette*, April 15, 1907).—A saturated solution of epsom salts is applied on 15 to 20 thicknesses of ordinary gauze, which is kept moist by frequently pouring the liquid on the compress without removing it. This is kept up for 24 hours when the skin is washed after the compress is removed. The skin is markedly blanched and there is a partial loss of sensation, which persists for several hours. With these applications relief has been obtained in epididimitis, acute rheumatism, gonorrheal joints, sprained joints, and in facial erysipelas the local pain was abated in a few hours. The suggestion for the external use came through the known anesthetic quality of magnesium sulphate when used hypodermically.

Transbrachial Anastomosis for Brachial Palsy.—Babcock (*J. A. M. A.*, May 25, 1907).—A case is reported of a child who at three and one-half years had anterior poliomyelitis, which involved the right arm and leg. The leg improved markedly and the paralysis disappeared. The arm and shoulder did not improve and at fifteen months were wasted and useless except a slight activity in some of the extensors and pronators of the forearm and only slight power of extension of the wrist, and pronation of the hand. As the condition was stationary the only relief was to come from surgical intervention. The muscles were either wanting or too weak to have their tendons transferred, and there were no active branches of the brachial plexus to transplant into the paralyzed ones. The spinal accessory was involved, leaving the hypoglossal as the only motor cranial nerve available and it was impossible to successfully transplant it into the defective plexus. Accordingly the anastomosis was made with portions of the opposite brachial plexus. The sixth nerve on the paralyzed side was split in half at its emergence and separated downward as far as the junction of the various nerve trunks. The sixth nerve on the well side was divided longitudinally into two parts beginning at the clavicle and was split upward for two inches. The free ends of the nerves were sutured end to end with chromic gut in front of the trachea. Three and one-half months later the improvement was far beyond expectation. Power of extension had increased in the fingers and partial flexion of the fingers and wrist had returned, shoulder drop had disappeared, the scapular, trapezius and pectorals have developed much. The deltoid and upper arm muscles still are paralyzed. The arm is used constantly. The opposite side shows no injury from the nerve interference.

The Treatment of Diffuse Suppurative Peritonitis.—Blake (*Am. Jour. of Med. Sciences*, March, 1907).—The report is on 99 cases with a definite purulent exudate, extending throughout the greater part of the peritoneal cavity. 78 cases were due to appendicitis, 13 followed perforating gastric ulcer, 8 were from perforation in typhoid. The principles of the treatment were to rapidly remove the origin of the inflammation, to irrigate the peritoneal cavity, and not to drain the general peritoneal cavity. The desirability of washing the peritoneal cavity is disputed, but the chief objection to the author's mind is the additional time required. The double current irrigator is used with normal salt solution until all the septic material is removed, and by its use it is claimed that septic material is not diffused. Washing in this way accomplishes more quickly and effectually what the drainage of the cavity is intended to do. This washing is done through a small opening, which is later partially closed and a small drain inserted down to the peritoneum, unless deep drainage is indicated such as imperfect removal of the cause of peritonitis, necrotic material, or oozing. The patient is returned to bed in the Fowler position. Intermittent irrigation for forty minutes at a time, of the colon through a double rubber tube every three hours for two days, or a constant slow method by syphon is used. The stomach washed out, and no food given until peristalsis is established. Blake believes that the improvement in the results of treatment in this class of cases has been gen-

eral, and does not depend so much on whether lavage or general drainage has been employed as upon the increased rapidity of getting the patient off the table, the use of large quantities of fluid by bowel, rest for the gastro-intestinal tract, and possibly the Fowler position. Of the 78 cases of peritonitis, caused by appendicitis, death occurred in 15 (19.2 per cent mortality). Of these half were drained. Of those recovering, 31 were not drained, 28 were drained to the appendix stump and 4 drained to the pelvis. Of the 13 stomach ulcer ruptures 4 died (30.7 per cent), 3 of these perforating over 36 hours before admission. Of the death and recoveries half of them were drained to the suture line. The other half not, only one case being drained to the pelvis. Of the 8 typhoid cases 4 died (50 per cent), 3 were drained and one drained to the pelvis. Of the 4 recoveries, 2 were and 2 were not drained into the pelvis. The abdominal wounds were drained in all cases. The author's personal impression was that patients made a smoother recovery when not drained.

ORTHOPEDIC SURGERY.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

OPERATIVE PROCEDURE TO INCREASE FLEXIBILITY IN CASES OF LATERAL CURVATURE OF THE SPINE.—LeBreton (*Amer. Jour. Orth. Surg.*, April, 1907).—The author describes the following method of operative treatment to increase the flexibility of the spine in scoliotics. An incision is made over the deep spinal muscles in the apex, or angle, of the dorsal curve, where the resistance to passive motion is the greatest. A section of muscle about three inches long is then removed by cross-cuts exposing three ribs from their angles to their spinous processes. By blunt dissection, the pleura is freed from these ribs, and from each rib a section is removed, beginning at their angles, and extending to the transverse process of the vertebrae. These transverse processes are then cleared of muscular and ligamentous fibers by the knife, cutting the anterior costo-transverse ligaments. The wound is then closed and a corrective jacket applied. After a few days, another jacket is applied, producing further correction. This operation has for its object a partial restoration of flexibility of the spine. It would seem probable that operative measures for lateral curvature would find a limited field. The case best suited for operation would be a healthy girl about sixteen or eighteen years old, with a fairly marked curvature which shows rigidity and rotation in the dorsal region, not yielding to the ordinary treatment.

PLASTER OF PARIS, THE EFFECTS OF VARIOUS SUBSTANCES UPON ITS RATE OF SETTING, AND THE SUBSEQUENT STRENGTH AND DURABILITY OF THE CAST.—Stern (*Amer. Jour. Orth. Surg.*, April, 1907).—The author has made a very careful study of the effects of various substances on the rate of setting, and subsequent strength and durability of plaster of

paris dressings. Pure plaster of paris should be selected, that which is well made and well kept. Such plaster will set in about seven minutes, which is fast enough for ordinary work, and yields a cast of the highest strength and durability. The use of starched crinoline bandages as the support in the application of plaster does not interfere with its rate of setting or its strength. The various forms of wire gauge bandages yield a cast increased tensile strength and therefore a lighter cast. Portland cement, when used with plaster of paris in amounts varying from ten to twenty per cent., yields a cast of superior hardness, strength and durability. It is especially adapted for use about the foot, ankle and thigh. Moisture, disintegrates, softens and dissolves plaster casts. The waterproofing of plaster casts by placing the bandages in a solution of sodium silicate is impractical. The finished cast should be thoroughly coated with sodium silicate solution, after it has hardened. The hardening of plaster models, corsets, etc., can be accomplished by dipping them, or painting them with hot alum solution. The use of any substance to accellerate the set of plaster of paris results in a soft and pliable cast of insufficient strength. The use of quick-setting dental impression plaster is also condemned for the same reason. The regular, slow-setting dental plasters are pure and unadulterated, and when kept clean and dry make the ideal material for orthopedic casts. Such plaster can be wound into bandages with starch, crinoline or wire gauze, and when especially heavy wear is expected can be mixed with ten to twenty per cent. of Portland cement.

Chronic Articular Rheumatism and Arthritis Deformans.—Hoffa (*Deut. Med. Woch.*, Vol. XXXIII, 1907, No. 14).—Basing his classification on a careful study of radiographs, and on analysis of histories and clinical signs, the author is prompted to divide the group of conditions recognized as rheumatoid arthritis, or arthritis deformans, into three types: (1) arthritis deformans, (2) poliarthritis chronica progressiva primitiva, and (3) chronic articular rheumatism. Arthritis deformans affects the large joints. It has periods of activity and remission, and is unaccompanied by muscle atrophy. The author's radiographs show spurs as the earliest lesions, followed by baring of bones and the production of osteophytes. Characteristic of this form is the disappearance of bone and cartilage going hand in hand with new growth of bone and cartilage. Poliarthritis chronica progressiva primitiva progresses steadily, attacking first the small joints, destroying the bones and producing muscle atrophy above and below the joints, resulting in deformity and displacement. Radiographs show marked atrophy of bone and disappearance of cartilage. The capsules of these joints, as shown by radiographs of joints distended with oxygen, are to a great extent obliterated. It is differentiated from arthritis deformans in that in this affection we have a primary disease of the skeletal portion of the joint, whereas in arthritis chronica progressiva, or arthritis destruens, we have a primary disease of the soft parts of the joint. Chronic articular rheumatism follows repeated attacks of acute rheumatism. He further divides these chronic joint conditions under two heads,—infectious and non-infectious.

The treatment of these conditions consists of applying supporting apparatus, mud-baths and massage.

A Case of Congenital Deformity of the Wrist.—Peckham (*Amer. Jour. of Orth. Surg.*, April, 1907).—The author describes a case in which the ulna extended backward, and the space which should have been occupied by the ulna was filled with thickened fibrous tissue. This was all dissected out and the parts restored to their normal condition, and firmly held by anteroposterior splints for about six weeks. Hot air baths and massage overcame the resulting stiffness.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. Johnson, M. D.

The Diagnosis of Diseases of the Prostate.—Ballenger (*Jour. Amer. Med. Assn.*, June 8, 1907).—After a consideration of the diagnostic points in the various diseases of the prostate, the author draws the following conclusions: the prostate gland is without doubt the cause of the majority of obscure urinary and sexual symptoms and should always be examined where there is any uncertainty as to their origin. Among the factors that tend to perpetuate a chronic or recurrent gonorrhea, a nidus of infection or irritation in the prostate is the most frequent cause. It is in this variety of prostatic inflammation that the largest number of errors are made in the diagnosis. Palpation, pus and proteid are the three things to rely on in reaching a conclusion as to the condition of the prostate. By palpation through the rectum, the gland, if diseased, may be found enlarged, nodular, irregular, boggy or apparently normal. Pus in the secretion expressed from the meatus or found in the urine or fluid voided after massage, when the urethra and bladder are excluded as possible sources, is positive proof that the prostate is inflamed. Proteid in the fluid passed after massage is equally as reliable as pus in the diagnosis of prostatitis.

The Cure of Unilateral Renal Hematuria by Injection of Adrenalin Through a Ureter Catheter.—Young (*Jour. Am. Med. Assn.*, May 18, 1907.)—An interesting case of persistent hematuria is reported, which was cured by the injection of adrenalin into the renal plvis through a ureter catheter. It is interesting because of its supposed traumatic origin, an injury having been received ten days before the hematuria began. Pain was constantly present in the side injured, but the hemorrhage came from the opposite side. There was absence of any signs of nephritis, which is held to be generally present in such cases. The author concludes as follows: With the use of adrenalin to stop hemorrhage we may have a measure of considerable diagnostic and therapeutic value. If we can in this way cure cases of persistent hematuria, without definite renal disease, much will be gained and patients saved from the

ordeal of cutting operations. If only a temporary cessation of the hematuria can be procured in other cases, a chance will be afforded for a more careful study of the urine, and a comparison of the function of the kidneys, which may make renal diagnosis much more easy.

A Clinical Lecture on Abdominal Tumors Associated with Disease of the Testicle.—Osler (*The Lancet*, May 25, 1907).—Not infrequently the diagnosis of an obscure affection of the abdomen is determined by an examination of the testicles. The nature of a peritonitis or of an abdominal tumor has been cleared up by finding a tuberculous orchitis, or in syphilis, gummata may occur at the same time in the liver and in the testicles. But it is more particularly in malignant disease of these organs that abdominal features are met with. Two very common events in connection with malignant disease of the testicle, the influence of trauma and the very rapid generalization, are well illustrated by a case cited. Following an injury, the tumor may appear in a few months, or years may elapse. It is well to bear in mind that the course may resemble an acute orchitis. The generalization is, in the majority of cases, through the lymphatics, and may take place very early. In the abdominal tumor, there are two groups of cases, first the tumor is a secondary involvement of the lymph glands, and in the other the tumor is primary involvement of the retained testis in a monorchid or a cryptorchid. The lymphatics of the testicles discharge very high up into the aortic lumbar glands. The secondary tumor is, therefore, above the level of the navel, and usually begins in the upper quadrant of the abdomen, on the side of the affected organ. It has all the characteristics of a deep-seated mass, which has sprung from the retroperitoneal glands. The solidity of its growth, its depth, the immobility the absence of an outline; conforming to the well-known shape of a renal or splenic tumor, and the impossibility of grasping it bimanually, which can be done in the majority of all new growths of the kidney, and the character of the throbbing impulse, which is so marked in these deep-seated lymphatic tumors in the neighborhood of the aorta—all these points favor the view of a large secondary mass involving the lymph glands, connected with the left testicle. Several cases are described which illustrate both forms of tumor.

The Diagnosis of Pyelonephritis.—Beer (*Jour. of Am. Med. Assn.*, June 8, 1907).—The author found in two cases of pyelonephritis, that, after the administration of methylene blue, stained pus-cells were found in the urine at irregular periods. In one case, the stained pus did not appear until several months after. He experimentally produced an ascending pyelonephritis in a dog. Methylene blue was administered for several days following the operation, and the kidney was removed two weeks later. This specimen, when fresh, showed very little pigmentation, but after treatment with oxidizing agents, even after fixation in alcohol, showed multiple grayish-blue pus foci throughout the organ. These areas lose their color if treated with reducing agents, and regain the same on subsequent oxidization. He summarizes his clinical and experimental data as follows:

1. There is no differential diagnostic sign between simple pyelitis and pyelonephritis.

2. Pyuria from the upper urinary tract may be due to either of these conditions.

3. By the use of the above described methylene blue test, it would seem that a differential diagnosis may be made.

4. Methylene blue is deposited in the parenchymatous abscesses, and may be stored in these for years.

5. A late discharge of methylene blue, bound to the pus, is indicative of the rupture of such parenchymatous abscesses into the pelvis of the kidney, and is consequently diagnostic of pyelonephritis.

The Etiology and Diagnosis of Spermatocele With a Report of Three Cases.—Whitney (*Amer. Jour. of Urology*, May, 1907).—The diagnosis of these cysts before tapping is not easy. Those of small size must be differentiated from small inflammatory indurations of gonorrheal, tuberculous, or syphilitic origin. Rarely the tension of the fluid within the sac is so great that we must consider the solid tumors of the testis, sarcoma, and carcinoma. Usually in those of large size the chief difficulty is in distinguishing them from hydrocele hematocele and chylocele. An important diagnostic point is the presence of the testis below and in front of the swelling, a point which should be kept in mind when tapping. When hydrocele and spermatocele exist together on the same side, the testis is between the two swellings. By withdrawal of the fluid, the diagnosis between these diseases is quickly made. As a rule, these spermatic cysts do not present the pear-shaped outline of a hydrocele, and their light transmission is less. When small, they move readily with the testis. With rare exceptions, the fluid is of a milky character, often opalescent, and on standing settles gradually into two layers, the lower of which is white and contains many spermatozoa, while the upper is much clearer. Microscopically, this sediment shows great numbers of spermatozoa and a few lymphocytes and epithelial cells. Chemically, this fluid is characterized by a relative absence of albumen, which is in marked contrast to hydrocele fluid. The prognosis is good so far as life is concerned, as they are quite benign, but the integrity of the testis may be endangered from their presence. The treatment is either by operation, the cyst being dissected out, or by tapping and injecting of one to two drachms of tincture of iodine.

Hematuria Due to Pathological Conditions of the Bladder.—Ware (*Amer. Jour. of Urology*, May, 1907).—The author, in considering the subject, divides hematuria into painless and painful varieties; the former, when void of any other symptom, is peculiar to new growths, all the more so if the hemorrhage is sudden, profuse and non-provocative. The hematuria may be entirely disproportionate to the size of the growth, and traumatisms may bring on the hematuria in benign and malignant growths. Hematuria, when associated with pain, may be significant of any pathological condition of the bladder. It is therefore desirable to keep in mind the age of the patient. In infants, we are most likely to

encounter stone; in youth, inflammations of the bladder, dependant on infections; in middle life, new growths added to the aforesaid; and in old age, enlarged prostate and stone. The character of the hematuria sheds some light as to the diagnosis. Thus, hematuria of sudden appearance, its eually sudqden cessation, unprovoked by any violence or traumatism, its reappearance, and each time of a bright red color, speaks for neoplasm. The hematuria of vesical tuberculosis and vesical calculi have much in common. The hemorrhage is terminal, bright red and associated with great pain. The frequency of micturition is incessant in vesical tuberculosis by day and night; in vesical calculi, the frequency is not so great in the recumbent posture, and the hematuria in vesical calculus more readily sets in after exercise. In conclusion he notes that there is nothing pathognomonic in the various hematurias due to pathological conditions of the bladder, which distinguishes them from each other or differentiates them from renal hematurias that can be singled out by any other mode than the cystoscope. There is, therefore, all the more justification to adhere to the academic distinction of painful and painless hematuria, and the hematuria in relation to age and its bearing on urinary disturbances.

OBSTETRICS AND GYNECOLOGY.

IN CHARGE OF

HUGO EHRENFEST, M. D.

LAPAROTOMY FOR THE CURE OF IRREDUCIBLE INCARCERATED RETROFLECTION OF THE PREGNANT UTERUS.—Pestalozza (*La Ginecologia* rev. *Jl. of Obst. of Brit. Emp.* June 1907).—The writer discusses 31 recorded cases in which the abdomen has been opened to correct a retroflexion of the gravid uterus, and gives the account of a case of his own. A primigravida, aged 31, was admitted to the hospital complaining of difficulty in micturition of four weeks' standing. Her last menstruation 13 weeks ago. After four liters (130 ounces) of urine had been drawn off by catheter it was found that she was about three months pregnant, and that the uterus was retroflexed. On the right side of the lower part of the abdomen was felt a resistance which did not seem to be due to the uterus. In spite of frequent catheterization, postural treatments and attempts at reposition by pushing up the fundus and pulling on the cervix, the uterus remained retroflexed, and as pus had appeared in the urine, Pestalozza opened the abdomen. He found a small suppurating ovarian cyst on the right side, adherent to the fallopian tube and very firmly attached to the omentum. This was removed and the hand, placed into the hollow of the sacrum, lifted the uterine fundus. The patient recovered and pregnancy progressed undisturbed.

VAGINAL CESARIAN SECTION IN CASES OF ECLAMPSIA, PLACENTA PREVIA AND CERVICAL CARCINOMA.—O. Buettner (*Hegar's Beitr. zur Geb. und Gynaek.* Bd. XI. H. 3).—The writer records the histories of

seven vaginal Cesarian sections. In five cases the indication for the operation was given by eclamptic convulsions, four of the patients recovered. The operation was performed after the 13th, 5th, 10th, and 7th attack respectively. In the one unsuccessful instance 5 convulsions preceded and 16 followed the operation. Two other successful operations were performed on a case of placenta previa and on a patient in the eighth month of pregnancy suffering from a cervical carcinoma.

Chorian-Epithelioma Without a Primary Growth in the Uterus.—Walthard (*Zeitschr. f. Geb. und Gyn.* Bd. 59. H. 3).—The author describes in this paper a most unusual and very interesting case of chorion-epithelioma. During the second half of an apparently normal pregnancy with a live child typical chorion-epithelioma was found in the vagina, kidneys, liver and lungs without a trace of this malignant growth either in the placenta or that part of the uterine wall where the placenta was inserted. Since the organs were examined in serial sections and thus the abscence of a primary growth positively established, this case proves the possibility of a chorion-epithelioma developing from a perfectly normal chorion epithelium or synctium, in the absence of a vesicular or any other degeneration of the chorionic villi.

Supravaginal Hysterectomy in a Case of Adherent Placenta.—Santucci (*La Ginecologia* rev. *Jl. of Obst. Brit. Emp.*, June 1907).—The patient, 36 years old, had six full term pregnancies within ten years. In the first two labors the spontaneous delivery of the placenta was followed by an atonic hemorrhage. In the third labor there was some trouble in the third stage. In the fourth labor a severe hemorrhage immediately followed the expulsion of the child. Placenta had to be removed manually and the hemorrhage was finally stopped by packing of the uterus. The patient made a recovery eventually, after a suppurating parametritis. In the fifth labor the third stage was difficult, and there was severe bleeding again. For the sixth labor the patient was admitted to the hospital. Two hours after expulsion of the child, a severe hemorrhage occurred. An attempt at separation of the placenta by a hand inside of the uterus was unsuccessful, it being impossible to remove the placenta without removing portions of the uterine musculature. The patient's condition becoming very grave from the loss of blood, it was decided to perform an abdominal hysterectomy. This was done without an anesthetic, after the uterus had been packed, the stump being ligatured and fastened to the abdominal wall. Recovery was complete and uninterrupted. It was found that it was impossible to remove the placenta without laceration of the uterine wall. Bauereisen considers vaginal hysterectomy the preferable procedure in cases of unusually firm adherence of the placenta. Santucci defends his own method of treatment with the following arguments: In cases of severe hemorrhage it is necessary to plug the uterus before removal; therefore, in such a case vaginal removal would be impossible. Abdominal hysterectomy with elastic ligature of the stump can be performed more rapidly than vaginal hysterectomy. The latter operation with the field obscured by blood must be more difficult. By abdominal hysterectomy

secondary hemorrhage can be prevented with certainty, while its occurrence after vaginal hysterectomy must be possible when the circulation recovers from the collapse and shock.

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

EPILEPSY IN CHILDHOOD.—Keeling (*Brit. Jour. Chil. Dis.*, April, 1907) considers epilepsy in childhood as related to other diseases in the following aspects: Pathological, etiological, familial, symptomatic. His study was based on an analysis of 150 cases and his conclusions are as follows:

The pathology of epilepsy appears to resemble in some respects that of cerebral diplegia, chorea, paralysis agitans, neurasthenia, myoclonus and migraine.

Etiologically, rickets is an important factor in the causation of epilepsy.

A variety of epilepsy, which may be termed toxic epilepsy, is chiefly gastro-intestinal in origin.

Reflex epilepsy is apparently rare; peripheral irritation probably plays a very small part in the production of the fits.

The effect of measles on epilepsy is uncertain.

Chorea is very rarely found associated with epilepsy.

Infantile paralyses, especially the congenital forms, are closely related to epilepsy.

An injury or a fright is frequently the exciting cause of a fit. Instrumental delivery may be followed by paresis with subsequent epilepsy.

Enuresis is an occasional sequela of epilepsy.

The disease known as "night terrors" is probably a mild form of epilepsy.

The three affections most frequently found in the family history of epileptics are epilepsy, migraine and alcoholism.

Migraine appears to be very closely allied to epilepsy, both in the family history and symptomatically.

The differential diagnosis between Meniere's disease and epilepsy is occasionally difficult.

THE REDUCING POWER OF URINE FOLLOWING THE ADMINISTRATION OF UROTROPIN.—Abt (*Arch of Ped.*, April, 1907) has made a series of examinations of the urine of children with various conditions for which urotropin was given. He finds: (1) The administration of urotropin will cause the urine to reduce copper solutions after the drug has been administered for some time. (2) Urotropin does not ordinarily cause the reduction of the bismuth test solutions. Such urine has no action on polarized light; it does not show a fermentation test. (3) The continued use of urotropin may give rise to albuminuria, with the presence of blood and casts. (4) Nephritis prevents the reduction of Haines' solu-

tion by diminishing the permeability of the kidneys for urotropin. (5) A patient with normal kidneys secreting acid will eliminate urotropin very rapidly, and this can be demonstrated by the reducing action of the urine on copper solution.

Enteritis and Appendicitis in Childhood.—Comby (*Arch de Med. des Enf,* April, 1907) as the result of his study of this relationship, which, particularly in the French literature, has attracted a good deal of attention of late, comes to the following conclusions:

(1) There is a direct causal relation in childhood between enteritis and appendicitis.

(2) Among the forms of enteritis, that form which causes appendicitis the most often is the muco-membranous entero-colitis. This is the more easily explained in that the appendix is not really an adnexa but rather a prolongation of the colon.

(3) Identity of structure also explains the pathological relationship of the appendix and the colon. In muco-membranous enteritis, which might also be called follicular enteritis, the inflammation involves the lymphoid and tissue of the large bowel. Involvement of the lymphoid tissue of the appendix can therefore easily occur.

(4) In children it will be noticed that entero-colitis and appendicitis are often preceded by attacks of rhino-pharyngitis and by adenoids, and these affections may mark an early stage of intestinal and appendicular infection.

(5) Appendicitis in childhood is essentially a chronic disease, often unrecognized, healing spontaneously in the majority of cases. This disease is very frequently a sequela, or a special localization of infectious processes of the digestive tube.

(6) If we wish to prevent appendicitis, children should be put under a judicious alimentary regimen so as to avoid enteritis. Enteritis, when it does occur should be carefully looked after. Finally, rhino-pharyngitis and adenoids should not be neglected, inasmuch as they often are the prelude to digestive disturbances and appendicitis.

Infantile Gastro-Enteritis with Special Reference to the Return to the Normal Diet After the Acute Attack.—Boischut (*These de Paris,* 1907) says that every case of acute gastro-enteritis ought to be treated by a strict water diet for from twelve to forty-eight hours. In breast-fed infants the mother's milk is almost always well tolerated after this period, but in the majority of cases of artificially-fed infants, milk digestion is not good and it is necessary to give the child a carbohydrate regimen so as not to fatigue the intestinal tract and produce intestinal fermentation. Therefore for a short period, vegetable broths should be given, after which milk is ordinarily well tolerated. Sometimes this regimen is not sufficient because vegetable broths are not sufficiently nourishing and the infant needs nitrogenous food. In these cases, excellent results are achieved by the use of buttermilk and malt diastase foods. Their food value is near that of milk; infants take them very easily and their use may be continued for a long time. The general condition of these in-

fants after the use of these foods is quickly improved and in many cases they rapidly bring about a return to the normal.

Relapsing Chorea in Childhood.—Lazzaret, (*These de Lyon,* 1906) in 140 cases of chorea, saw relapses in 39. Sometimes there were two, three or four relapses in a case. One case had twelve. These relapses were produced under the same influences which provoked the original attack,—fright, trauma, an attack of rheumatism, a fresh eczema, scabies. Sometimes no definite cause could be assigned. It does not seem possible to say, in a given case, whether or not relapses will occur. On the other hand, in the relapse, the choreic movements usually have preference for their original localization and it may even be said that if the original chorea is generalized, the relapse will also be generalized. So far as prognosis is concerned, the occurrence of a relapse is of bad import for the future, because the choreic patient shows the taint of the nervous system, particularly where there are several attacks during later childhood.

NEUROLOGY.

IN CHARGE OF

Sidney I. Schwab, M. D.

The Hughlings Jackson Number of Brain (*Brain,* Part cxvi, 1906). —A volume of *Brain* dedicated to the great neurologist Hughlings Jackson on the occasion of the completion of his fiftieth year as a practitioner of medicine, has just made its appearance. It is a notable example of the most progressive neurological thought and deserves mention for the reason that it represents a more than usual attempt on the part of well-known scientists to offer some adequate solution of the more common problems of neurology. Among the contributors are Jackson himself, Victor Horsley, Sherrington, Edinger, Batten, Buzzard, Holmes, Wilson and Head. The paper selected for abstract in this department is written by Head. This one is chosen over the others because it represents that unusual combination of clinical material used to elucidate a profound physiological problem. The fact that Head is above all a clinician and that all his views are founded upon absolutely accurate clinical data give to anything he writes a value that is almost unique in the neurological literature. Some time ago there appeared in *Brain,* from his pen, a piece of research work on the analysis of the sensory function based upon clinical data and upon experiments made upon himself. The theory so advanced has in a measure revolutionized our previous conception of the sensory system and though it naturally has attracted criticism it has not suffered to any extent from it for the reason that the observations that formed his basis are there for any one to prove or disprove. The present paper called "The Grouping of Afferent Impulses Within the Cord" is of much the same pattern and considers as its foundation the theory previously advanced. A paper of so great an extent and so full of clinical observations is difficult naturally to

abstract but the effort will be made to give some kind of an idea of the results of so patient a series of observations so that in a measure at any rate a notable piece of work may reach a wider circle of readers. The basis of Head's investigations arises from the fact that there is a much more complicated scheme of sensory conduction both in the cord and in the peripheral nerves than would seem at first sight necessary. It would seem reasonable, he says, to suppose that the mechanism of sensation was arranged in such a way, that, from the skin to the sensorium there was one system of end organs, fibres and cells for each sensory quality appreciable by man. On this supposition every application of heat to the skin would cause a disturbance in the activity of a special set of end organs which reacts to this form of stimulation only. Recent work has shown that the arrangement is not as simple as this. Head and Sherrin have found that the mechanism of conduction at the peripheral level is formed of three systems, each of which is capable of demonstration. These three systems are: 1. A system corresponding to the group of impulses called deep sensibility. The end organs of this system respond to the stimulus of pressure to the movement of joints, tendons and muscles. 2. The protopathic system capable of responding to painful cutaneous stimuli and to the more extreme degrees of heat and cold. 3. The epicritic system. To the impulses of this system we owe the power of cutaneous localization of discriminating two points and of recognizing the finer grades of temperature called cool and warm. In the present paper the authors are concerned with the grouping of sensory impulses in the spinal cord, rather than with the position of the tracts by which they pass to the higher centers. They plan to demonstrate not only that a change takes place in the grouping of the afferent impulses, but also to show at what point this transformation takes place. Seventeen cases form the clinical basis of this investigation some of them observed for long periods of time, in some instances more than five years. The method of study used in these cases is a model of careful objective inquiry by which the personal factor on the part of the examiner and the patient is removed as far as possible. In any case in which there was the least doubt in the matter of the facts obtained, the series was omitted from the reports. Tests of sensation were made only after the technique was refined to the utmost limit and until all possible sources of error were understood and when possible, removed. The tests were conducted in such a way that the patient was never allowed to become tired and on each examination the patient was prepared to show the most accurate responses possible. Conditions never before throught of as influencing sensory stimulation were taken into consideration such as the weather, fatigue, condition of skin, bowels, bladder, etc. These are mentioned in order to show that sensory data derived from examinations conducted with less care are open to serious objection as not approaching the standard set up by this research. A most careful study of the lack of refinement in the instruments used to determine defects in sensory response led to the discovery of instruments of a greater precision or at least to the means of counteracting the lack of precision in the means used. It is impossible to more than outline the method of the research and the reader who is interested must go to the

original. Attention might be called to the clinical reports of cases included in this paper. They are models of English clinical reporting and they form a valuable contribution in themselves. The following conclusions are advanced by the writers:

We believe that the spinal cord is the seat of the transmutation of most of the impulses of the peripheral into those of the secondary level, of the afferent nervous system. This transmutation and recombination takes place on the same side as that by which the impulses enter the cord. The secondary paths for sensory impulses then cross with greater or less rapidity, so that ultimately all except those subserving the sense of passive position and movement and tactile discrimination have passed to the opposite side within the limits of the spinal cord. Even these sensory impulses cross after reaching the nuclei of the posterior columns. At the same time within the spinal cord afferent impulses become separated into sensory and nonsensory. Of the latter many pass up into the secondary system of the direct cerebellar tract to reach the cerebellum. Thus the mechanisms of the secondary or intramedullary level are concerned with the separation of non-sensory from sensory afferent impulses and with the recombination and transmutation of sensory impulses into specific groups. Of this piece of work it can be said as was said of the previous research alluded to in this paper that it has added not merely a page, but an entirely new chapter to the science of neurology.

Myasthenia Gravis.—Borgherini (*Neurologisches Centralblatt,* No. 10, 1907).—The author has had the opportunity of studying three cases of myasthenia gravis but as he was not able to obtain autopsies he made an effort to study the muscular changes in specimens removed by biopsy. He assumes with Buzzard and some of the other recent investigators in the pathology of this disease that there is something that is pathologically characteristic in the changes found in the muscular substance in the cases that have been microscopically studied. By means of a specially devised technique, both in regard to the method of hardening the specimens and in the method of staining them, the author came to the following conclusions: By the use of this method very subtle changes in the muscle substance have been found. The plasmodial degeneration is the most significant of these changes. A certain relationship exists between progressive muscular dysptrophy and myasthenia. This is grounded on the presence of similar anatomical changes and on the occurrence of both conditions in the same individual. The peculiar electrical reaction depends not only upon the increase in the nuclei of the muscles but likewise in the existence of certain chemical substances which are the product of the cell activity in the diseased muscles.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

The papers abstracted below were read before the Section on Ophthalmology of the American Medical Association, June, 1907.

IMMEDIATE AFTER-TREATMENT OF CASES OPERATED ON FOR CATARACT (WITH BANDAGE).—W. H. Wilder.—The after treatment should be started before the operation and should include a thorough bath, shampoo of the head, cleansing of the face and field of operation, a cathartic the night before and an enema the morning of the operation. Morphin, gr. ¼, together with atropin, gr. 1-120, is administered hypodermically to all patients who are excitable or in great dread of the operation. Immediately after the operation the closed lids are covered with a couple of layers of thin gauze moistened with boric acid solution; on this the pads of absorbent cotton are so arranged as to insure equal pressure and the bandage applied as a figure of eight over the eyes and around the head. The bandage is made of a fairly good quality of mosquito netting cut into strips about 3 inches wide and 4 to 5 yards long, rolled, and then sterilized with dry heat. Just before use it is moistened and applied as a starch bandage. There is just enough sizing in the fabric to make the layers adhere when it dries. The edges on the cheeks, nose and forehead may be stuck down with collodion. The patient is carried on a stretcher to bed. If he shows any inclination to carry his hands to his face, the hands are tied to the sides of the bed. The dressings are changed the following day and daily thereafter. The edges of the lids are gently wiped with pledgets of cotton moistened with boric acid solution and a drop of 1 per cent atropin instilled. Irrigation is not practiced. Both eyes are bandaged and the protective shield replaced.

At the end of the fourth day the unoperated eye is left uncovered and the patient allowed to sit up. A laxative or enema is given. At the end of the fifth day the bandage is left off entirely and the eye simply covered with a dark shield. At the end of ten days the patient is allowed to expose the eye from time to time to the light.

Post-operative mania calls for sedatives or hypnotics. These failing, the unoperated eye should be uncovered. Cough due to pharangeal or laryngeal irritation may be helped by sprays, sipping ice water or eating shaved ice. Bronchial cough may be controlled by heroin, codein or morphin.

A prolapsed iris, if recent, may be replaced, but usually it will have to be excised. In the latter event care must be taken to free the iris at the angles of the wound so that when the prolapsed portion is excised the rest will draw back into the anterior chamber.

Hemorrhage into the anterior chamber or vitreous calls for the administration of arterial sedatives, as nitroglycerin, measures to promote the flow of blood to the extremities and leeches to the temple. Pilocarpin sweats, dionin and hot applications will help to promote the absorption of blood.

At the first sign of infection a brisk cathartic with calomel should be given. To improve the general tone and increase the vital resistance quinine, strychnia, and whiskey are indicated. The eye should be irrigated every few hours with boric acid solution, or bichloride of mercury solution 1-6000. Particular attention should be paid to the condition of the lachrymal sack. Subconjunctival injections of physiological salt or cyanid of mercury 1-1000 are occasionally useful adjuvants. Hot applications continued for 15 to 20 minutes should be applied three times a day.

For severe plastic iritis Wilder strongly endorses Gifford's plan of giving salicylate of soda in 20 grain doses every three hours. In addition active elimination by diuretics and cathartics and pilocarpin sweats may be useful. Local treatment should consist of hot applications, dionin and subconjunctival injections of salt solution.

Vitreous opacities, the sequelae of such an inflammatory attack, yield best to the administration of syrup of hydriodic acid in one drachm doses three times a day.

Concerning the Loss of Vitreous Humor in the Operation for Extraction of Cataract: Its Immediate and Remote Results.—J. M. Ray.—A careful review of the subject leads Ray to the following conclusions: 1. Loss of vitreous at the time of the extraction adds to the danger of primary infection, this danger being irrespective of the quantity of vitreous lost, but depending largely on the care used in the preparation of the field of operation. 2. The danger of iridocyclitis during the stage of healing is materially increased by loss of vitreous. The increased activity in the blood vessels and lymphatics during the repair of the traumatism necessary to the operation for cataract being overtaxed excites changes in the iris and ciliary body that end in a hyalitis with closure of the pupiliary space and anterior phthisis. 3. When the vitreous is once lost the material taking its place is probably aqueous, the framework is never reformed, and the vitreous becomes fluid throughout. Floating particles increase in amount as time goes by. Fibrillary bands are thrown out from the retina to take the place of the reticulum of the vitreous. These bands contract, causing minus tension and retinal detachments, followed by the characteristic squared atrophied eye due to the action of the recti muscles on the softened globe.

Operations for Secondary Cataract.—P. A. Callan.—The author's conclusions are, in part, as follows: Secondary membranes, consisting of capsule, gauze-like in texture, readily yield to a discission performed with the knife needle under artificial illumination.

Thin secondary membranes consisting of one or more bands require different handling. Simply avoiding these bands in performing a discission with the knife needle is a conservative course that gives a good visual result followed, however, in some cases by subsequent disaster, due to the traction of the bands on the ciliary processes. Tough resilient bands can be disposed of successfully by the expert use of the thin Graefe knife in one operation by cutting at a right angle to their long axes.

Thick, dense secondary membranes within the area of a fairly large pupil can be disposed of by the use of a Graefe knife in two operations.

The employment of Bowman's two-needle operation for dense, opaque membranes covering a fairly large operation field is deprecated.

For all forms of secondary cataract other than the thin diaphanous membranes the forceps scissors (De Wecker) affords the safest and most reliable of all instruments. In all complicated forms of secondary cataract, occluded pupil, incarceration or prolapse of iris it is the only instrument of which a proper use combines a minimum of risk with a maximum of benefit.

Do not tear secondary cataracts. Always cut them.

Disasters following secondary operations are in the main due to tearing methods in operating. The least danger is from infection.

LARYNGOLOGY AND OTOLOGY.

IN CHARGE OF

W. E. Sauer, M. D.

The Etiology and Recent Treatment of Hay Fever.—Curtis (*Presented before the Section on Laryngology and Otology of the Amer. Med. Assn.*, Atlantic City, June 4-7, 1907).—The author states that the factors which enter into the causation of hay fever are: First, a nervous element which is responsible for the cases that come on spontaneously with sneezing and lachrymation, irrespective of the season; second, pathological changes in the nasal mucous membrane, polypi, deflection, hypertrophies, synechiae, etc.; third, an exciting constitutional dyscrasia, such as a lithaemic or uric acid dyscrasia, gout, rheumatism, obesity, etc., and fourth, some adventitious irritant, as dust, pollens or animal emanations.

In regard to treatment, the author begins by stating that the personal element, viz., suggestion, enters largely into the result of treatment. Adrenalin chloride in various strengths, used as a spray or taken internally, combined with proper constitutional treatment, and the correction of pathological conditions in the nose, seems to be the most satisfactory method of treatment. The most recent treatment consists in the administration of the Dunbar antitoxic serum, which has given satisfactory results in some cases, but has been absolutely worthless in others. The author does not consider the Dunbar antitoxin a specific and in order to obtain the consensus of opinion concerning it he wrote to 300 specialists; the great majority of those responding considered it unsatisfactory without the removal of spurs, ridges, etc.

The author concludes as follows: 1. Hay fever is a disorder amenable to no specific treatment. 2. The number of cases of hyperesthetic rhinitis from other causes than rag weed and other pollens is about one-third of the total number. 3. About one-third of the cases supposed to be due to pollen reaction may be relieved by constitutional and surgical methods of treatment. Predispositon to attack in these cases being due

to definite causes, would suggest the theory that induced enervation of the sympathetic was an important etiologic factor. 4. Primary intoxications may take place from pollen toxins in cases where the sympathetic system apparently is not previously enervated. These cases, theoretically, should react to anti-toxin treatment. 5. The consensus of opinion to-day is against the claim made for pollantin, though observers who have been instructed personally by Professor Dunbar, indorse unqualifiedly the great benefit to be derived from the treatment. 6. Medically the suprarenal capsule products hold the first place to-day in the treatment of hyperesthetic rhinitis. 7. The importance of constitutional treatment as an adjunct to any local application is of supreme importance. 8. The best of all treatments yet found is the climatic, with previous attention to nasal conditions.

Cauterization of the Four Susceptible Areas of the Nasal Mucosa.—Prof. Gustav Killian (*Laryngoscope,* May, 1907).—According to the author, hypersensitiveness of the nasal mucosa is produced in vaso-motor rhinitis by prolonged irritation brought about by changing conditions in the seasons of the year, habits and occupation. This hyperesthesia is confined to four principal points in the nasal mucosa; two in either naris, one being lateral and the other medial. The lateral point lies slightly above the region of the anterior end of the middle turbinate; the medial is felt on the upper part of the septum about the tubercle and by probing one can easily prove that just these two spots exhibit the greatest sensitiveness. Patients designate these spots with the greatest precision and call the physicians' attention to them. These sensitive spots are located in the region of the ethmoidal nerve and the hyperesthesia of the nerve-ends results in an accentuation of the normal reflexes, tickling and tendency to sneeze, and increased secretion, because of the extension of the irritation.

The author states that the treatment is two-fold; first, local treatment which consists in the removal of causes which excite hyperesthesia of the mucosa and elimination of reflexes, and secondly, general treatment when the nervous system is to be considered.

Elimination of the reflexes is best accomplished by cauterizing the four sensitive areas with trichloracetic acid after cocainization. On each of these four areas a cauterized surface of less than one-half inch in diameter suffices. The result is sometimes permanent, but even when only temporary it may extend over an entire hay fever season.

The general treatment and prophylaxis sometimes accomplishes little, but mechanical interference in conditons of deflected septum, polypi, etc., will bring about best results.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

M. F. Engman, M. D.

The Accumulative Experience of the Profession in the use of Roentgen Rays in the Treatment of Acne, Acne Rosacea, Eczema

AND PSORIASIS.—Biddle (*Am. Quarterly of Roentgenology,* Vol. I., No. 1).—This article of Dr. Biddle is a valuable contribution, as it encompasses the experience of opinions of some of the leading radiographers in this country and Europe.

The author sent a circular letter asking opinions and the results of experiences in the treatment of severe cutaneous diseases, especially acne, eczema and psoriasis.

The conclusions drawn from this inquiry are as follows:

I feel justified in presenting the following conclusions, which I trust will be ratified or modified to meet the views of the members, that the result may be an authoritative expression:

Time, a decade, through the experience of a large number of competent observers has given to Roentgen rays a valuable and by reason of improved methods for the measure of dosage and perfection of machinery and technique, an ever-increasing usefulness as a therapeutic agent in the local treatment of acne, acne rosacea, eczema and psoriasis. Conservatively used, with due regard to their well-recognized dangers, especially in these non-malignant dermatoses, a knowledge of their efficiency and limitations and with proper technique, they are useful in selected cases, not as a routine nor as the only treatment, but as an addition to our other remedies, especially in those cases which have resisted ordinary treatment and in which there is a marked infiltration of the tissues.

Acne.—While x-ray therapy is applied by a few to all types of acne, it finds its greatest usefulness in the rebellious indurated, deep-seated, sluggish, stapylococcic pustular type, which have resisted all other measures. As a routine treatment the dangers to the face to exposure even with the best of technique outweighs its advantages over other tried measures. In every case the exposures should be given with caution; they should be mild and of short duration. The rays seem to exercise their greatest influence in those with coarse seborrhoeal and pale, pasty skins with a natural predisposition to acne and comedones.

Although the experience of operators seems to vary greatly as to the time necessary to effect a cure, it would seem that the more permanent results are obtained in those cases in which the exposures are given in cycles. The preponderance of opinion is to the effect that, though the time for effecting a cure is not materially lessened, cases otherwise incurable are much benefitted and relapses are less frequent.

In *Acne Rosacea* the results are not brilliant. The influence is greatest in those conditions in which the glandular inflammation predominates. The effect on the dilated blood vessels and upon the tumefaction of the nose is not appreciable. The treatment must be prolonged, though in those cases in which improvement is noticed, it seems to be shortened in comparison with other methods.

The same caution must be observed as in the cases of acne.

Eczema.—The chronic, infiltrated patch, found as a type in eczema of the hands and of the feet, will often yield to x-ray therapy, when it has resisted with a dogged persistence all other remedies. In selected cases

of subacute inflammation it may be found useful, but it should never be applied to the acute stages of the disease except in cases of unusually severe and protracted pruritus, to the eczema of childhood, except in the most obstinate cases, or to an eczema otherwise easily managed. Some brilliant results are reported and it would seem that the duration of treatment is shortened, but recurrences are frequent.

Psoriasis.—To the persistent, large infiltrated plaque or to the aggregation of smaller lesions which nothing else seems to affect with any degree of permanency, is radiotherapy applicable with the assurance of good results. The treatment must be prolonged and relapses are not infrequent. Reports are received of the successful treatment of psoriasis but on the whole, except in a few isolated cases, which have yielded quickly and apparently permanently to the influence of the rays, the story is one of repeated disappointment.

The claims of the early enthusiast have not been realized and such early claims seldom are. But in the hands of the competent operator, with the present more accurate means of measuring the dosage, and the gradual improvement in technique, x-ray therapy in general is finding its level and within its limitations the results are more certain and permanent. Were the dermatologist more expert with the machine and did he give it his personal attention instead of relying upon the uncertainty of an assistant, and were the radiotherapist a better diagnostician of the dermatological lesion, more uniform results would probably be reported. The causes of failure with the one lies in his ignorance of his agency, and his improper technique; with the other, in his inability to recognize the true character of the lesion and its interdependence upon other constitutional conditions.

Ignorance, faulty judgment and inexperience of the operator (defective technique), over confidence and rashness or timidity in its use, (for I believe with the history of past mishaps as their precedent, more men under than over expose), have done much to belittle the value of x-ray therapy. To this may be added as causes of failure, defect of machinery, uncertainty of reaction in the individual skin, inability of the operator from one cause or another to select cases appropriate for treatment, time and expense necessary to a successful outcome and uncertainty of results.

The dangers, namely, permanent telangiectasis, warty growths, burns, astrophy or increased and permanent pigmentation of the skin, growth of downy hairs, etc., should always be kept in mind. Fortunately the burn is of less frequent occurrence, but the dilated blood vessels, the astrophy, may not present themselves for several months after the exposures have been discontinued, even where the exposures have been mild and have produced little or no inflammatory reaction. (Hyde and Montgomery). And so we find that x-ray therapy is contraindicated in all types of acute inflammation or during acute exacerbation of a chronic condition and in childhood, when the skin is too delicate and dangers are too serious, except as a dernier resort.

The most successful practitioner will be he who combines an extensive clinical experience with a thorough knowledge of the principles and prac-

tice of Roentgenology; he who, never neglecting an opportunity to improve his knowledge of the one, keeps himself abreast the advances of the other.

MEDICAL LAW AND MEDICAL JURISPRUDENCE.

IN CHARGE OF

IRVIN V. BARTH, LL. B.

MALPRACTICE: DEGREE OF CARE REQUIRED.—Davis vs. Warford (*Court of Appeals of Kentucky*, 1907) 100 S. W. 312.—Action to recover damages for the alleged unskillful and negligent treatment of plaintiff's broken arm. Upon the facts in evidence the trial court instructed as follows concerning the degree of care exacted by the law:

"(2) The Court instructs the jury that negligence is the want of ordinary care; that ordinary care as applied to this case is that degree of care that physicians and surgeons would ordinarily use in the practice of their profession of medicine and surgery—that is to say, their best skill and ability. The skill required by law in a physician and surgeon is that degree of skill possessed and exercised generally by physicians and surgeons of ordinary care and skill in the same or similar communities as was defendant located."

Upon appeal the Court held:

"The second instruction is erroneous in requiring of the defendant his best skill and ability. The rule is that a physician must use that care and skill which is exercised generally by physicians of ordinary care and skill in similar communities, and the Court should have so instructed the jury. No man is always at his best. One who employs a professional man may expect from him the ordinary care and skill of his profession. He is liable if he does not give this, but more cannot be demanded. If the physician is responsible in any case where he does not exercise his best skill and ability, then it will be a material inquiry, and evidence may be offered to show what is his best skill and ability. This would be to introduce into the case a new and confusing issue which has never been allowed. When a person employs a physician, the law implies an agreement on his part to exercise the ordinary care and skill of the profession. The implied contract goes no further and there is no liability on his part if the implied contract has not been broken. Were it otherwise, there would be no fixed rule in cases of this sort, and in every case the result would depend, not on the contract implied by law between the parties, but on the proof in that case as to the skill and ability of the physician. It is no defense to the physician that he used his best skill and ability if he fell short of the legal standard and there is no liability on his part if his care and skill come up to the legal standard; for the plaintiff's cause of action rests in the end on the breach of the implied contract between the parties."

NOTE.—The Courts are to-day generally agreed upon the test of care and skill required of physicians and surgeons. If in any particular case ti may be shown that the defendant physician possessed that amount of knowledge, skill and experience, and exercised that degree of care and skill which physicians practicing in similar localities ordinarily possess and exercise, he may successfully resist a claim on account of alleged malpractice. But this test was not reached without much hesitation on the part of the courts.

To have fixed the standard of care and skill as such as might be exercised by the "thoroughly educated" physician or surgeon would have been unjust to the great body of the profession; to have required only that he be measured by the standard of the "moderately educated" physician or surgeon would have been regarding too lightly the interests of the public. So, too, it was soon discovered by the courts that "a rule of law demanding that the degree of care and skill required shall be proportionate to the severity of the injury or disease treated" would be not only impractical, but likewise work a hardship on the profession Again, it was manifest that the locality wherein the physician practiced must be an element of consideration. It seemed reasonable that physicians in large cities must be measured by a higher standard than to be applied to the physicians located in small towns or rural districts. But this regard for the country practitioner was often found to work injustice to the people in the locality, for, as was said in an Iowa case, "there might be but few practicing in the given locality, all of whom might be quacks, ignorant pretenders to knowledge not possessed by them, and it would not do to say that because one possessed and exercised as much skill as the other he could not be chargeable with the want of reasonable skill. The law, then, wisely fixed the standard as that of "similar localities."

The doctrine of the principal case has been more clearly announced in two Missouri cases, often cited and approved. And in those cases, too, it more definitely appears just what part the physician's "best judgment" has to play. In the first of these, *West vs. Martin,* (1861), 31 Mo. 375; the Court said:

> "Whether errors of judgment will or will not make a surgeon liable in a given case depends not merely upon the fact that he may be ordinarily skillful as such, but whether he has treated the case skillfully or has exercised in its treatment such reasonable skill and diligence as is ordinarily exercised in his profession. For there may be responsibility where there is no neglect, if the error of judgment be so gross as to be inconsistent with the use of that degree of skill that it is the duty of every surgeon to bring to the treatment of a case according to the standard indicated."

In the later case, *Vanhooser vs. Berghoff,* (1886), 90 Mo. 487, the Court held that where there is a difference of opinion among practical and skillful surgeons as to the practice to be pursued in a certain class of cases, the surgeon "may exercise his own best judgment, employing the methods his experience has shown him to be the best and a mere error of judgment as to this would not, under the law, make him liable in damages."

OBITER DICTA FROM FOREIGN JOURNALS.

THE LATE PROFESSOR PAUL POIRIER—J. NOIR.

In 1892 Professor Poirier published the first volume of his "Treatise on Medico-Surgical Anatomy." This "Treatise," of great practical utility, was discontinued because, in the course of its compilation, the author became cognizant of the fact that the deficiencies in French works on descriptive anatomy were so great that to refer the reader to such books would be of little value. He then bethought him of the urgency of a treatise on descriptive anatomy. With Professor Charpy he undertook the "Treatise," a work of such vast proportions that no one man could handle it. Poirier, though practically editor-in-chief, called to his aid a number of French anatomists, and with rare discrimination, gave to each the branch of anatomy of which he had made a special study. No work of similar proportions having been published, a comparison illustrating its superiority cannot be made, but the succinct words of Professor Mathias-Duval, when he presented it to the Academy, ought to suffice. "It is," said Mathias-Duval, "a veritable monument erected to French labors in the field of anatomy." In connection with his great work it would be well to mention his small, didactic chef-d'oeuvre: "Fifteen Lessons in Human Anatomy." These "Lessons," an exact reproduction of lectures delivered in the ampitheatre of the Anatomical Institute at the close of each term in dissection, enjoy an immense popularity with the students, and since their appearance in 1896, have passed through many editions.

Students are good judges and know what qualities should go to the making of a good lecturer. It is needless to state, that Professor Poirier swayed his students as few can, and to his credit, be it said, the onerous labor of lecturing never palled on him, though latterly his time was greatly taken up with other duties. For him to lecture was a passion; in addition to the regular course he gave supplementary courses; he delivered many dedicatory speeches; and his learned talks at the close of each year enlightened the students on the importance of the study of anatomy. He was a worthy successor of Professors Sappey and Farabeuf in upholding the study of anatomy at Paris, a science which to-day, with that of obstetrics, is about the only one worthy of consideration in the domain of serious criticism.—(*Le Progres Medical*).

CLEMENCEAU AND THE PREVENTION OF TUBERCULOSIS.

The anti-tubercular war cannot accomplish much in one day. French science rightly prides itself on its past activity in the combat. And since

one of our scientists was the first to declare tuberculosis contagious, am I wrong in entertaining the hope that it will be a French savant who will be the first to determine the exact mode of transmission and the most efficacious means of immunizing individuals, or at least, of curing them? But this should not be forgotten, that all future conquests made by French savants or those of other countries will be the result not only of the work done by physiologists in their laboratories, but of the strenuous efforts of enlightened statesmen; for the war is as much social as medical. The individual of to-day should recognize the importance of preventive measures as they apply to his own family, and, better still, as they apply to the entire community. Personal and public, and in the widest sense, social hygiene would mean much; they would emphasize the importance of cleansing the cow-sheds so that the milk would be pure; they would give thought to the medical surveillance of schools; they would encourage hygienic instruction for the rich and the poor, so that mansions and tenements, emporiums and shops would be benefitted; they would see to the protection of the child against any possible contagion when it is exposed, by disinfecting contaminated rooms or houses; they would be the sharpest lance in the fight against the sort of alcoholism which debilitates the organism, thereby making it good soil for the propagation of the disease. Above all, there should be co-operation making for a severe discipline applicable alike to the individual and to society, the prime feature of which should be the organization of a society founded on the "self-defense" principle of Man vs. Disease, so that a knowledge of the danger may be understood by all, and some change for the better in our laws of modes of living be effected.

The fact that we recognize the difficulties that beset us in making a fight against tuberculosis is a step in advance, in so far as it illustrates that we are not shunning the obstacles before us in our triumphant march to victory.—(*Le Progres Medical*).

APPENDICITIS—HENRY MARET.

Another death has been caused by the results of an operation for appendicitis. Always the *results*, you understand, because the operation itself was a great success. Nowadays one never dies of anything else but *results*. If there were no *results*, we imagine, the health of an individual would soon be restored. How unfortunate it is that *results* should always obtrude themselves after an operation!

You are about to say, without an operation there would be no *results*. But what would become of the progress of surgery?

Remember, ye of little faith, that appendicitis is a disease of recent date, of which our fathers had not even the faintest idea; and being ig-

norant, excelled in strength. It is well to pardon them their dense ignorance, these old-fashioned, benighted people. All the same I make bold to state that the malady was invented to permit surgeons to operate; for if the surgeon had not longed and desired to operate, appendicitis would not have been invented. Furthermore, what has science done for us?

Already I hear the epithet "imbecile" flung at me and the statement made that though our fathers knew nothing of appendicitis, they had it all the same. When dying, I am assured, they were very tranquil; no murmur of complaint escaped them, but, crime of omission, they were ignorant of the disease and its *results!*

Is the mortality on the decrease? Not at all. There are just as many deaths now, as formerly, perhaps more, for the *results* are active in causing them. But to-day we are fortunate in knowing why. Wonderful gain, indeed. Certain obstinate individuals would prefer not to die, but they are the people who make light of the vicissitudes of life. Evidently one dies more tranquilly when one knows the reasons.

Has not medicine progressed wonderfully since the times of Hippocrates and Galen. There are some ignorant persons who think that medicine was invented to cure people. Immense and outrageous error! Medicine was invented to teach people why they die. Without doubt, on this point we of to-day are better fortified than were the people of antiquity. What more do you demand, you discontented sick! Well, well, I see it is hopeless to satisfy you.—(*La Revue Medico-Sociale.*)